# West Virginia Department of Health and Human Resources

Medicaid Enterprise Data Solution

Request for Proposal HHR2000000001

RECEIVED

2020 FEB 10 AN 9: 09

WV PURCHASING DIVISION



Joni Wheeler • Senior Strategic Client Executive February 4, 2020



# **AVAILABILITY OF INFORMATION**

Proposal submissions become public and are available for review immediately after opening pursuant to West Virginia Code §5A-3-11(h). All other information associated with the RFP, including but not limited to, technical scores and reasons for disqualification, will not be available until after the contract has been awarded pursuant to West Virginia Code of State Rules §148-1-6.3.d.

By signing below, I certify that I have reviewed this Request for Proposal in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that, to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

Cerner State & Local Government Services, Inc.
(Company)
(Representative Name, Title)
(Representative Name, Title)
(816) 201-1024 / (816) 474-1742
(Contact Phone/Fax Number)
February 4, 2020
(Date)

# ADDENDUM ACKNOWLEDGEMENT FORM SOLICITATION NO.: CRFP 0511 HHR200000001

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

**Acknowledgment:** I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

(Check the bo	ox next to each addend	ım received)	
[X]	Addendum No. 1	[ X ]	Addendum No. 6
[X]	Addendum No. 2	[ X ]	Addendum No. 7
[X]	Addendum No. 3	[ ]	Addendum No. 8
[X]	Addendum No. 4	[ ]	Addendum No. 9

[X] Addendum No. 5

Addendum Numbers Received:

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.



[ ] Addendum No. 10

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.



# ATTACHMENT B: TITLE PAGE, EXECUTIVE SUMMARY, AND SUBCONTRACTOR LETTERS

# 1. TITLE PAGE

In accordance with Section 5 – Vendor Proposal of this RFP, the Vendor should include a title page stating the Vendor's intent to bid for this Request for Proposal (RFP). The Vendor's response should include a Title Page; Table of Contents; Executive Summary; and Vendor contact and location information.

The Vendor should include the following cover letter, signed in blue ink by an authorized signatory legally binding the Vendor and include it in the labeled "Original Proposal."

Provide the following information regarding the person responsible for completing of the Vendor response. This person should also be the person DHHR and Purchasing Division should contact for questions and/or clarifications.

Name	Joni Wheeler	Phone	(816) 313-7062
Address	2800 Rockcreek Pkwy	Fax	None
	North Kansas City, MO 64117	E-mail	Joni.Wheeler@cerner.com

Subject to acceptance by the State, the Vendor acknowledges that by submitting a response AND signing in the space indicated below, the Vendor is submitting a formal offer to meet the requirements and intent of the RFP.

In addition to providing a signature to Section 6.89 (amended per Addendum #4) = Availability of Information in the RFP, failure to sign the Submission Cover Sheet or signing it with a false statement shall void the submitted response or any resulting contracts.

Man Ell	Eini 1 31 January 2020
	natory Authorized to Legally Bind the Company / Date
Name (Typed or Printed)	Marc E. Elkins
Title	Assistant Secretary
Company Name	Cerner State & Local Government Services, Inc.
Physical Address	2800 Rockcreek Pkwy



	North Kansas City, MO 64117
State of Incorporation	Delaware

Please note that our responses are based on our interpretation of your questions. Specific functionality may or may not be implemented within your planned implementation, based on the solutions you license and/or to which you subscribe, and the implementation method and scope you choose. Your request may contain a number of questions that are not directly pertinent to the performance of the system and to which responses cannot be attached without qualification. If this response is to be added to the contract, Cerner reserves the right to first review and update the responses.

# By signature hereon, the Vendor certifies that:

- 1. All statements and information prepared and submitted in response to this RFP are current, complete, and accurate.
- 2. The proposed solution for the Project meets the requirements of this RFP.
- 3. The Vendor will comply with all federal and state laws, rules, and regulations that are in force currently or anytime during the term of a resulting contract.
- 4. The Vendor understands that proposal submissions become public and are available for review immediately after opening pursuant to West Virginia Code §5A-3-11(h). All other information associated with the RFP, including but not limited to, technical scores and reasons for disqualification, will not be available until after the contract has been awarded pursuant to West Virginia Code of State Rules §148-1-6.3.d.
- 5. The company represented here is an authorized dealer in good standing of the products and services included in this response.
- 6. The Vendor and its principals are eligible to participate in this transaction and have not been subjected to suspension, debarment, or similar ineligibility determined by any federal, state or local governmental entity; are in compliance with the State's statutes and rules relating to procurement; and are not listed on the federal government's terrorism watch list as described in Executive Order 13224. Entities ineligible for federal procurement are listed at <a href="https://www.sam.gov/portal/SAM/#1">https://www.sam.gov/portal/SAM/#1</a>.
- 7. Prior to award, the Vendor affirms it will have all current approvals, licenses, or other qualifications needed to conduct business in West Virginia.

#### 2. VENDOR INFORMATION

Complete the following information regarding the Vendor's information, including: primary contact for any questions pertaining to the Vendor's payment address to which the State should send payments under the Contract, Legal Notice Address to which the



State should send legal notices for any potential future agreements, and individuals responsible for the Vendor's response.

# 2.1 Payment Address

In Table 8, the Vendor should provide the address to which the State should send payments.

Table 1: Payment Information (RFP Table 8)

Payment Information:					
Name:	Cerner State & Local Government Services, Inc.	Title:	N/A		
Address:	P.O. Box 959156				
City, State and Zip Code:	St. Louis, MO 63195-9156				
Phone:	N/A	Fax:	N/A		
Email:	invoicesupport@cemer.com				

# 2.2 Legal Notice Address

In Table 9, the Vendor should provide the name, title, and address to which the State should send legal notices.

Table 2: Legal Notice Information (RFP Table 9)

Legal Notice Information				
Name:	Attn: President	Title:	N/A	
Address:	2800 Rockcreek Pkwy			
City, State and Zip Code:	North Kansas City, MO 64117			
Phone:	N/A	Fax:	N/A	
Email:	N/A			

#### 3. EXECUTIVE SUMMARY

This section should be a brief (three [3] to five [5] page) summary of the key aspects of the Vendor's Technical Proposal. The Executive Summary should include an overview of the Vendor's qualifications, approach to delivering the services described in the RFP; timeframe for delivering the services; proposed team; and advantage of this proposal to the State.



West Virginia's Department of Health and Human Resources (DHHR) oversees the health and care of each of its members, connects these members to providers for person-focused care, and ensures proper disbursement of Medicaid funding for hundreds of thousands of transactions each year. To better serve these members and providers, and to ensure the success of the program for decades to come, DHHR plans to modernize and expand its Medicaid data warehouse system.

We understand DHHR's goal to better leverage high-quality data. Working in close collaboration with the Department, Cerner will modernize your Medicaid Enterprise Data Solution (EDS) to create a platform that spans the many divisions and agencies beyond Medicaid services. Together, we will ensure the requisite data collection to benefit not just your members, but all of West Virginia.

For this project, DHHR requires a qualified Medicaid EDS partner to accomplish its primary goals of improving quality of care at a sustainable cost, improving data analytics, and reporting capabilities, and ensuring long-term stability, performance, and use. In partnering with Cerner, the Department will stand at the forefront of health care information technology. We lead the industry of health care information technology, setting the standards for data management and improved quality of care. Our proposed EDS will provide DHHR the same industry-leading quality and power to define an open and interoperable infrastructure to seamlessly connect traditional and non-traditional data.

# Cerner's Qualifications and Experience

Cerner has grown steadily over the past 40 years to become one of the world's largest healthcare IT companies. We bring extensive experience in managing high volumes of clinical data and in applying non-traditional data to power meaningful change. Cerner is proud to serve as the EHR vendor for 24 acute and rehab hospitals in the state of West Virginia, supporting approximately one third of the state's hospital data on our EHR Platform. The following table summarizes Cerner's experience.

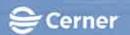
#### Table 3 Cerner Experience

# Marshall Health, Marshall University School of Medicine

We recently partnered with Marshall Health in Huntington, West Virginia to implement our enterprise data warehouse to better coordinate care for individuals across the state. In six months, we deployed our EDW and onboarded 10 data sources into the Platform. During the first half of 2020, Marshall Health will expand their project and onboard four additional data sources. They will then be prepared to go live with Cerner's other population health analytics applications. We are excited to witness the modernization of our partners' data solution, and we look forward to transforming the delivery of health and care in West Virginia for years to come. In addition to our wealth of experience in the private sector, we have a growing portfolio of Medicaid-specific experience with state agencies.

State of Montane, Department of Public Health and Human Services (DPHHS). Enterprise Data Warehouse, Analytics Comprehensive Primary Care Plus (CPC+), and Population Health

DHHR's goals for this EDS project are very similar to the approach taken by Montana's DPHSS. Namely, they sought to target clinical data to analyze and support policy decisions and program monitoring. Cerner was selected by the state to create comprehensive statistical profiles of health care delivery and utilization by providers and members. Cerner's Platform now provides a central repository for Montana's health care programs' analytical reporting, budgeting, forecasting, and daily program monitoring. Additional aspects of this project include CMS Federal Reporting, Transformed Medicaid Statistical Information System (T-MSIS), System Integration interaction, Data Syndication API's, and expansion across Department agencies to develop an enterprise tool. These tools provide decision makers with more timely, accurate, and consistent access to information to better predict outcomes and anticipate future needs. We are currently supporting



#### certification life cycles for DPHHS.

State of Kansas, Kansas Department of Health and Environment (KDHE): Medicald Enterprise Data Warehouse (subcontractor to DXC)

Like DHHR, KDHE has ambitious goals for advancing its Medicald data collection and leveraging capabilities. Cerner replaced both the legacy DXC data warehouse and a secondary incumbent contractor: IBM Watson®. These projects combined both legacy systems into our data warehouse with a wide array of analytical use applications within the Kansas MMIS. We currently merge claims and administrative data from the Kansas interChange MMIS data model and will soon add clinical data from the state's Health Information Exchanges and other EHR data sources to provide KDHE access to historical views of each of its Medicaid members. Non-traditional sources such as direct feeds from MCO's, Vital Statistics, and Immunization Registries are on the planned roadmap. KDHE will identify trends, key performance indicators, provider metrics, and population segmentation with greater insight into intervention opportunities to bend the health care cost curve. We recently completed the certification lifecycle for KDHE.

Cerner also has large federal contracts with the Department of Veterans Affairs and the Department of Defense, as a subcontractor to Leidos, where we are deploying our electronic health record and the solution we are proposing for the EDS.

### Approach to Delivering Services Described in RFP

Our EDS takes MMIS data from disparate sources and combines them to create a single, unified database. From there, we offer users the tools they require to leverage this data to form a more holistic summary of each of its members. Cerner and DHHR will apply our methodology to create a modern and centralized data warehouse for West Virginia. We provide the business intelligence, project management, program integrity, data analytics services, and applications required to meet your current and future needs. Our comprehensive data warehouse, data analytics, and reporting capabilities will allow data sharing beyond traditional system boundaries. Our implementation team is experienced and highly skilled, and we are confident that our delivery will align with your timeline.

### Cerner's Platform and Applications

Cerner's proposal for West Virginia includes of a powerful Platform, innovative applications, and comprehensive suite of services. Our suite of tools and applications are designed to meet the unique needs of your Medicaid members and stakeholders. We provide the infrastructure to incorporate traditional and non-traditional data, which begins with the HealtheIntent Platform, our SaaS based offering for the EDS. HealtheIntent is a cloud-based infrastructure that accepts data from any source and does not rely on a single unique identifier.

Cerner's data ingestion process and probabilistic algorithms ensure matching of disparate data. From there, we normalize and transform data into a single concept to facilitate decision support, analytics, research, and new knowledge discovery. The Platform allows the Department to use transformed data to create insightful member management programs, leveraging the real time, actionable workflow capabilities of the Platform. We offer a suite of EDS applications within the HealtheIntent Platform.

With our enterprise data warehouse (HealtheEDW), users integrate and leverage data from each member's longitudinal record, applying predefined reports and data discovery experiences built around Medicaid use cases. Users also have access to Cerner's analytics application (HealtheAnalytics), which identifies trends to better determine root causes by manipulating metrics as needed. Finally, Cerner's HealtheDataLab draws normalized data from the Platform



to support research, data science, and health intelligence initiatives. On-demand cloud computing platforms enable localized and enterprise-wide analysis for all modeling needs at scale.

#### Cerner's EDS Partners

We collaborate with two valued partners as our subcontractors for data ingestion and program integrity services. These partners are:

- i2i Population Health—Controls and executes all aspects of the extract, transform, and load (ETL) process. i2i's solutions utilize standard ETL processes to consume data from a variety of source types. Our partnership with i2i accelerates the data ingestion process.
- Tyler Technologies—In partnership with Pulselight, provides a broad spectrum of program
  integrity analytics tools and case management applications covering program integrity
  requirements, including analytics, reporting, and investigative workflow management (case
  intake, decision to investigate, referral to another authority, appeals, recovery, and closure).
  Their continuous configurability allows for adaptation in response to ever-changing agency,
  regulatory, and statutory business requirements.

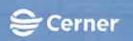
# **Timeframe for Delivery of Services**

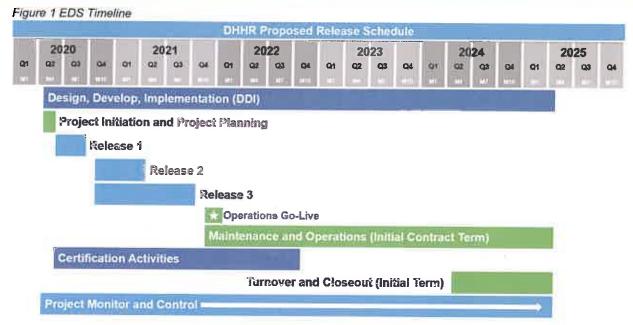
Cerner offers Software as a Service (Saas) applications to deliver the WV Medicaid EDS. Assuming we will initiate the contract on May 4, 2020, we will commence the DDI phase in the following three releases:

- Release 1—Embed all data from the incumbent system in our HealtheIntent Platform.
   Pending contract signature timelines, Release 1 has the potential to allow DHHR to end its current contract on the original 2020 timeline.
- Release 2—Project team identifies and incorporates all clinical data sources (e.g., stateowned hospitals and HIEs) and initiates program integrity applications.
- Release 3—Acquisition of the remainder of traditional and non-traditional data sources (e.g., IES sources and External Databases) and the finalization of work for CMS federal reporting and T-MSIS.

Using our Medicaid Deployment Methodology and agile development approach, which is a proven and stable implementation method, we are proposing to go live with the EDS within 6 months. During Release 1 we will initiate system certification activities and help you obtain CMS system certification within 12 months post DDI. Maintenance and Operations begin at the end of Release 1 while we continue to bring on additional data sources and deliver content during Release 2 and 3. This approach provides DHHR with speed to value as we enter the Maintenance and Operations phase with an integrated and modern EDS.

We propose a timeline for DHHR that will allow you to meet your EDS goals. The following graphic describes our proposed timeline including our proposed DDI release schedule, Maintenance and Operations, and Turnover and Closeout to be performed over the course of the contract.





#### **Proposed Team**

Cerner proposes a team of experienced, high-performing associates to successfully deploy and operate your EDS. These experts will support the Department's requirements throughout the life of the project. They possess the skills and knowledge to meet and exceed the requirements of the RFP. Each has hands-on experience with Cerner's Platform and applications and are familiar with Medicaid Enterprise Certification Toolkit (MECT) and Medicaid Enterprise Certification Life Cycle (MECL) requirements. Additionally, they have strong project management experience, in their respective areas, and have delivered results using Cerner methodologies.

To further support this team, we have strategically partnered with Tyler and i2i for their program integrity and data extract capabilities, respectively.

#### Advantage of Proposal to the State

The Department requires a qualified Medicaid EDS partner to accomplish your primary goals of improving quality of care at a sustainable cost, improving data analytics and reporting capabilities, and ensuring long-term stability, performance, and use. In partnering with Cerner, the Department will better meet your health care information technology goals. DHHR can realize the following benefits with Cerner's capabilities, which is illustrated in the table below.

Table 4 DHHR Benefits with Cerner Capabilities

Benefit to DHHR

Cerner's Strategy

Non-Claims/Non-Traditional Data



- DHHR will support non-traditional data sources to expand beyond the traditional boundaries of West Virginia's Medicaid agency. You make a significant leap forward by incorporating claims, clinical, and non-claims data to better target health outcomes.
- Incorporate non-claims and non-traditional data sources with our experience needed for your elevated data goals.
- Users are not limited to a single data model. The Platform allows leveraging the core data model, but also provides the capability for users to develop their own data models.
- Advanced data analytics tools and data scientists to foster analytics, predictive analytics, and machine learning.

#### Speed to Value

- Leverage our rolling release schedule and SaaS applications designed to support more efficient release strategies.
- Increased value of clinical data resulting in improved quality of care and more efficient provider access.
- With our unique implementation strategy, DHHR's EDS will be up and running quickly for optimal speed to market.
- We provide greater value through rich data by leveraging performance measures within our registries for analytics.
- Data can be loaded and refreshed on a schedule defined by DHHR, including daily.

#### Flexible Content Library

- You will access a higher quality of data via Cerner's pre-defined risk algorithms, quality measures, out-of-the-box reports, and reliable risk reports.
- We support data discovery and graphical and geographical reporting in our business intelligence capabilities with SAP BusinessObjects and Tableau.
- We take you farther and faster with pre-defined, pre-built content.
- Data science tools and expertise allows DHHR to develop and deploy custom algorithms.
- We bring use/re-use capabilities and allow you to rapidly explore new applications within the HealtheIntent Platform. Your experts can rely upon our existing applications without having to build from scratch.

#### Stable Partnership

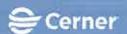
- Cerner offers a sound infrastructure for the WV Medicaid EDS through our strategic partnership with AWS.
- DHHR will configure with Cerner a reliable, stable EDS on a reliable project timeline.
- We bring West Virginia our reliable cloud-based Software as a Service (SaaS) offering through our partnership with Amazon Web Services<sup>SM</sup>.
- Our technology is widely deployed and successfully proven.
- Our Medicaid Deployment Methodology is proven in CMS defined modular deployments with those experiences continually applied to DHHR.

We bring the insight, health information technology, Medicaid, and clinical expertise necessary to achieve your goals within a successful project timeline. We offer DHHR the following unparalleled benefits for a successful contract:

- An EDS that combines warehouse functionality and our best-in-class infrastructure and analytics tools to embrace real-time scalability of space and processing
- A team of experts that continually develop, refine, and expand our technologies, providing DHHR with adaptable applications whose impact extends well beyond the life of the contract
- Applications hosted by Amazon Web Services<sup>SM</sup> (AWS) and align with CMS modularity standards
- Our commitment to modernization and to drive significant and sustained improvements within the Medicaid Information Technology Architecture (MITA) framework

# 4. SUBCONTRACTOR LETTERS

For each proposed subcontractor, the Vendor should attach to Attachment B: Title Page, Executive Summary, and Subcontractor Letters, a letter from the subcontractor, signed



in ink by an authorized signatory legally binding the subcontractor, which includes the following information:

- The subcontractor's legal status, federal tax identification number, D-U-N-S number, and principal place of business address.
- The name, phone number, fax number, email address, and mailing address of a person who is authorized to legally bind the subcontractor to contractual obligations.
- A description of the work the subcontractor will perform.
- A statement of the subcontractor's commitment to perform the work if the Vendor is selected.
- A statement that the subcontractor has read and understands the RFP, and will comply with the requirements of the RFP.
- A statement that the subcontract will maintain any permits, licenses, and certifications requirements to perform its portion of the work.

Please see the signed subcontractor letters for our proposed subcontractors Tyler Technologies and i2i Population Health on the following pages.



February 4, 2020

BID Clerk State of West Virginia, Department of Administration, Purchasing Division 2019 Washington St E Charleston, WV 25305

Reference:

West Virginia Department of Health and Human Resources, Medicaid Enterprise Data

Solution, RFP Number: HHR2000000001

Dear Brittany Ingraham,

i2i Population Health is pleased to join Cerner Corporation in submitting a proposal to the West Virginia Department of Health and Human Resources, in response to the above-referenced solicitation. The following information details legal status, primary authorized contact, and scope of work.

Legal Status: C Corporation Federal Tax ID: 68-0451839

Primary address: 377 Riverside Drive, Suite

300, Franklin, TN 37064 DUNS: 147130772 Authorized Contact: Justin Neece, President and

**CEO** 

Address: 377 Riverside Drive, Suite 300,

Franklin, TN 37064 Phone: 615-561-1190

Fax: None

Email: justinn@i2ipophealth.com

i2i Population Health will perform ETL and data integration for the EDS. i2i will directly interface, using i2iLinks<sup>TM</sup>, with disparate data systems to deliver an integrated data-driven solution. i2iLinks<sup>TM</sup> connects to a comprehensive and configurable set of interfaces that powers data collection, consolidation, and normalization. Our team is confident, with over 20 years of experience, that we will bring to this project the technical resources and skills necessary to successfully carry out the work.

We are committed to working with Cerner for the duration of this project. We have read and understand the RFP and will comply with requirements detailed in the RFP. In addition, i2i Population Health accepts all terms and conditions of the solicitation and will maintain licenses and certification requirements for this RFP.

Sincerely

Justin Neece

President and CEO i2i Population Health

Serving Others for Healthy Communities



Tuesday, February 4, 2020

Brittany Ingraham, Senior Buyer Department of Administration, Purchasing Division 2019 Washington Street East Charleston, WV 25305 Brittany.E.Ingraham@wv.gov



12901 Worldgate Drive, Suite 800 Herndon, VA 20170 P: 703.709.6110

F: 703.709.6118 www.tylertech.com

# Dear Ms. Ingraham:

Tyler Technologies is the largest company in the United States dedicated to providing software for the public sector, including federal, state and local government. A nationally recognized provider of integrated system solutions and professional services, Tyler serves clients in more than 21,000 installations across 10,000 state and local government locations in all 50 states, Canada, Puerto Rico, the United Kingdom and Australia, as well as more than 200 U.S. federal agencies. Tyler understands the importance of supporting our clients' mission-critical systems and maintaining the confidentiality of related personal information.

Legal Name	Tyler Technologies	
Legal Status	C-Corporation	
Federal Tax ID	752303920	
DUNS	041089293	
Principal Place of Business	12901 Worldgate Dr, Suite 800	
	Herndon, VA 20170	

# Person who is authorized to legally bind Tyler Technologies

Legal Name	Nerman Syed	
Email Address	Nerman.syed@micropact.com	
Phone Number	703.657.5343	
Fax Number	703.709.6118	
Mailing Address	12901 Worldgate Dr, Suite 800	
	Herndon, VA 20170	

**Description of work:** Tyler will be working with Cerner to provide a Program Integrity solution that allows WV DHHS to monitor Medicaid/Medicare claims for signs of fraud, waste, and abuse. The system will provide support for the investigation, appeals, and recovery processes.

We will provide the work as set forth in our agreement with Cerner. Not all of the terms and conditions are appropriate or applicable based on the products and services that Tyler Technologies will deliver in support of this effort. Tyler Technologies will in good faith negotiate and comply with any applicable requirements of the RFP, which shall be negotiated post award and mutually acceptable by both parties.

We will maintain permits, licenses, and certifications as required to support our portion of the work.

Sincerely,

Nerman Syed, Director of Contracts

Tyler Technologies

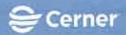


# 5. TABLE OF CONTENTS

This section should contain a table of contents. The table of contents should include all parts of the proposal, including response forms, and attachments, identified by section and page number. The table of contents should include a Table of Tables and Table of Figures, etc.

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# **ATTACHMENT C: VENDOR QUALIFICATIONS & EXPERIENCE**

# 1. ORGANIZATION OVERVIEW

This section of the Vendor's Technical Proposal should include details of the Vendor and subcontractor overview. The Vendor's Technical Proposal should include: organization overview, corporate background, Vendor's experience in public sector, and certifications.

#### 1.1 Vendor Overview

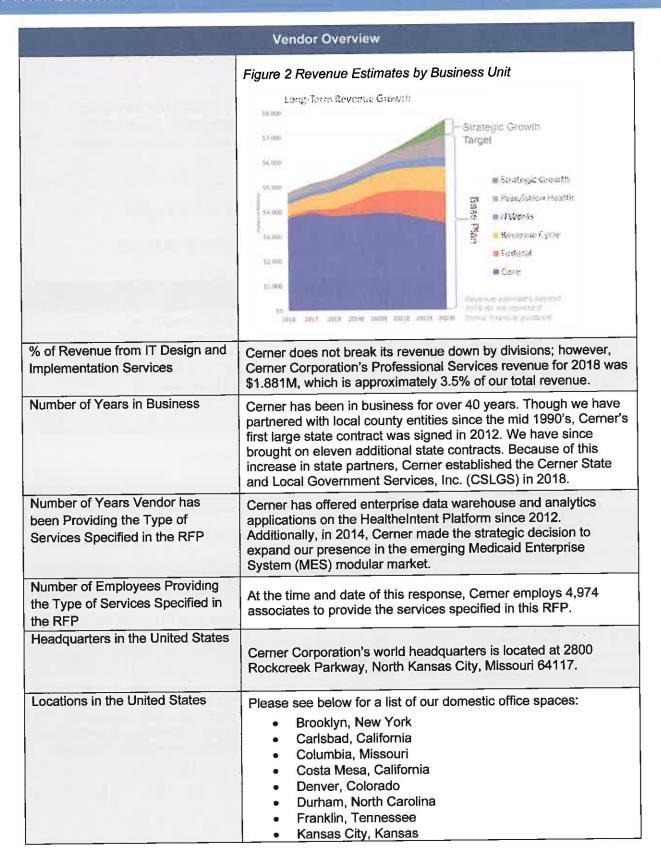
Provide all relevant information regarding the general profile of the Vendor.

Vendors are NOT to change any of the pre-filled cells in the following tables.

Table 5: Vendor Overview (RFP Table 10)

Vendor Overview			
Company Name	Cerner State and Local Government Services, Inc. Cerner State & Local Government Services, Inc. (CSLGS) is a wholly owned subsidiary of Cerner Corporation and is herein referred to collectively as "Cerner". CSLGS was established in 2018 and oversees our state and local contracts.		
Name of Parent Company (If Applicable)	Cerner Corporation		
Industry (North American Industry Classification System [NAICS])	NAICS Code 443142 - Electronics Stores		
Type of Legal Entity	Cerner is a C Corporation.		
Company Ownership (e.g., Private/Public, Joint Venture)	Cerner is a publicly-traded company.		
Number of Full-Time Employees	As of the date of this response, we have 27,509 associates globally.		
Last Fiscal Year Company Revenue	Our revenue for Cerner Corporation in 2018 was \$5,366,325,000.		
Last Fiscal Year Company Net Income	Our net income for Cerner Corporation in 2018 was \$818,542,000.		
% of Revenue From State and Local Government Clients in the United States	Cerner does not delineate revenue by client sector. Our State ar Local Government Electronic Health Record (EHR) clients fall in our Core business unit and our State and Local Government Medicaid Clients fall into our Strategic Growth business unit. Our federal clients are listed as a separate business unit. Expected revenue is described below.		







Vendor Overview			
	<ul> <li>Kansas City, Missouri</li> <li>Los Angles, California</li> <li>Malvern, Pennsylvania</li> <li>Mason, Ohio</li> <li>Minneapolis, Minnesota</li> <li>New Concord, Ohio</li> <li>Rochester, Minnesota</li> <li>Salt Lake City, Utah</li> <li>South Burlington, Vermont</li> <li>Tempe, Arizona</li> <li>Waltham, Massachusetts</li> <li>Yardley, Pennsylvania</li> </ul>		

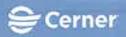
# 1.2 Subcontractor Overview (if applicable)

If the proposal includes the use of Subcontractor(s), provide all relevant information regarding the profile of each Subcontractor. This section may be duplicated in its entirety and a page created per Subcontractor included.

The Vendor is NOT to change any of the pre-filled cells in the following tables.

Table 6: Subcontractor Overview (RFP Table 11)

Subcontractor Overview				
Company Name	i2i Population Health			
Name of Parent Company (if applicable)	i2i Systems, Incorporated			
Industry North American Industry Classification System (NAICS)	541511			
Type of Legal Entity	S-Corp			
Company Ownership (e.g., Private/Public, Joint Venture)	Private			
Number of Full-Time Employees	68			
Last Fiscal Year Company Revenue	\$9,749,189			
Last Fiscal Year Company Net Income	\$384,658			
% of Revenue From State and Local Government Clients in the United States	2.8%			
% of Revenue From IT Design and Implementation Services	9%			
Number of Years in Business	19			



Subcontractor Overview			
Number of Years Vendor Has Been Providing the Type of Services Specified in the RFP	19		
Number of Employees Providing the Type of Services Specified in the RFP	39		
Headquarters in the United States	Franklin, TN		
Locations in the United States	One location, Franklin, TN		

able 7: Subcontractor Overview (RFP Table 11)		
	Subcontractor Overview	
Company Name	Tyler Technologies	
Name of Parent Company (if applicable)	N/A	
Industry North American Industry Classification System (NAICS)	541611	
Type of Legal Entity	C-Corporation	
Company Ownership (e.g., Private/Public, Joint Venture)	Public	
Number of Full-Time Employees	5,000+	
Last Fiscal Year Company Revenue	\$935.3 Million (2018)	
Last Fiscal Year Company Net Income	\$147.5 Million (2018)	
% of Revenue From State and Local Government Clients in the United States	95%	
% of Revenue From IT Design and Implementation Services	100%	
Number of Years in Business	53 years	
Number of Years Vendor Has Been Providing the Type of Services Specified in the RFP	40 years	
Number of Employees Providing the Type of Services Specified in the RFP	400+	
Headquarters in the United States	Plano, Texas	
Locations in the United States	Tyler has over 30 offices in the US, including Herndon, VA and Yarmouth, ME.	



# 2. MANDATORY QUALIFICATIONS

This section details the mandatory qualifications. The Vendor must complete this section to demonstrate that it has the experience needed to meet requirements set forth in this RFP. The table below lists each mandatory qualification, the Vendor must note whether it meets the qualification and provide narrative demonstrating fulfillment of the requirement. The Vendor must list each project experience separately and completely every time it is referenced.

Table 8: Mandatory Qualifications (RFP Table 12)

Mandatory Qualification Item(s)	Vendor Meets?		Provide A Brief Narrative To Demonstrate Fulfillment Of Requirement
The Vendor must demonstrate experience within the last three (3) years as the prime contractor for at least three (3) federal, state, local government or private healthcare entities where the proposed solution of similar size and scope a Medicaid DW (amended per Addendum #4) is currently being or has been implemented.	YES	NO	<ol> <li>State of Montana Department of Public Heaith and Human Services (Contract Start Date (03/2018) – Contract End Date (06/2023))</li> <li>DPHHS and Cerner are implementing systems and operational changes to provide DPHHS with advanced population health data analytics and to serve the State's Medicaid population. By implementing Cerner's data warehouse and advanced population health data analytics, DPHHS will improve Medicaid outcomes through a comprehensive population health management program.</li> <li>Los Angeles County Department of Health Services (Contract Start Date (6/2016) – Contract End Date (6/2021))</li> <li>LA County partnered with Cerner to manage their population health initiatives. Namely, to care for their patients at a higher quality and lower cost, provide an integrated solution with their Clinical EHR, enhance patient care through enterprise wide standards, and support PRIME initiatives under the 1115 MediCal waiver. LA County is live with HealtheEDW, HealtheRegistries, HealtheRecord, HealtheAnalytics, and HealtheCare.</li> <li>Suffolk Care Collaborative (Contract Start Date (June 2014) – Contract End Date (June 2022))</li> <li>Suffolk Care Collaborative (SCC) is an alliance of thousands of healthcare providers with the combined goal to develop a cohesive continuum of care in Suffolk County. Located in Long Island, NY, formed to support New York State's Delivery System Reform Incentive Payment (DSRIP) initiative. Under the guidance and leadership of Stony Brook Medicine, SCC established the Office of Population Health to improve county-wide health by addressing a wide range of challenges to health in order to</li> </ol>



Mandatory Qualification Item(s)	Vendor Meets?	177	Provide A Brief Narrative To Demonstrate Fulfillment Of Requirement
			improve outcomes by encouraging wellness, making healthcare more accessible and reducing costs by decreasing unnecessary hospital utilization. They use a variety of HealtheIntent solutions including: Healthe EDW, Healthe Registries and Healthe Care to manage this population with a variety of clinical and Medicaid data sources. Stony Brook Medicine also uses Healthe Intent to manage the rest of their populations with a variety of other payer contracts.
			Millennium Collaborative Care (Contract Start Date (April 2016) – Contract End Date (February 2020))
			Millennium Collaborative Care is a Performing Provider System (PPS) which includes Eerie County Medical Center and Kaleida Health and has collated 60+ data sources into HealtheEDW to manage their Delivery System Reform Incentive Payment Program (DSRIP) population. With this data they distribute registries access to providers and management reporting for the Performing Provider System (PPS). They are using HealtheCare for care management to target specific populations. The DSRIP initiative was established to improve the way states provide healthcare to Medicaid and uninsured patients. The goal is to improve outcomes for patients through a holistic and collaborative system that encourages wellness, makes healthcare appointments more convenient, engages family members, clarifies communications, and decreases hospitalizations and readmissions.
The Vendor must demonstrate at least three (3) years' experience in Medicaid and Health and Human			Kansas Department of Health and Environment (Contract Start Date (12/2015) – Contract End Date (12/2022*)
Services.	YES	NO	KDHE leverages DXC to implement the Kansas Modular Medicaid System (KMMS), following modularity guidelines defined by Centers of Medicare and Medicaid Services (CMS). DXC technology contracted with Cerner to implement our data warehouse application, HealtheEDW, as part of KMMS. Data Warehouse and Analytics (DWA) is Module 8 (Mod 8).
			*This contract includes additional optional years.



Mandatory Qualification Item(s)	Vendor Meets?		Provide A Brief Narrative To Demonstrate Fulfillment Of Requirement
The Vendor must include at least three (3) references from projects performed within the last three (3) years that demonstrate the Vendor's ability to perform the scope of work described in the RFP. Vendors may only use one (1) reference per project performed. The State strongly prefers three (3) references from different state engagements where the proposed solution a Medicaid DW (amended per Addendum #4) is currently or has been implemented. Please note, because this item is a mandatory requirement, it will not be scorable.	Meets?	NO	1. State of Montana Department of Public Health and Human Services (Contract Start Date (03/2018) – Contract End Date (06/2023))  DPHHS and Cerner are currently implementing systems and operational changes to provide DPHHS with advanced population health data analytics to serve the State's Medicaid population. By implementing advanced population health data analytics, DPHHS will improve Medicaid outcomes through a comprehensive population health management program.  2. Kansas Department of Health and Environment (Contract Start Date (12/2015) – Contract End Date (12/2022*)  KDHE leverages DXC to implement the Kansas Modular Medicaid System (KMMS), following modularity guidelines defined by Centers of Medicare and Medicaid Services (CMS). DXC technology contracts with Cerner to implement our data warehouse application, HealtheEDW, as part of KMMS. Data Warehouse and Analytics (DWA) is Module 8 (Mod 8).  3. Children's Hospital of Orange County (Contract Start Date (9/2014) – Contract End Date (9/2024)*This contract includes additional optional years.  CHOC's comprehensive population health data management strategy reinforces its commitment to advance the quality of care, improve access to care and increase proactive engagement; thereby, enhancing health outcomes. CHOC utilizes the platform and suite of solutions to aggregate and normalize data, develop condition-specific registries, and implement community care management, facilitating meaningful interventions. Using not just clinical and claims data, from several EHRs, but also pharmacy, eligibility, lab and other relevant disparate data sets to manage its 150,000k+ Medicaid capitated lives and improve the care
			to care and increase proactive engagement; thereby, enhancing health outcomes. CHOC utilizes the platform and suite of solutions to aggregate and normalize data, develop condition-specific registries, and implement community care management, facilitating meaningful interventions. Using not just clinical and claims data, from several EHRs, but also pharmacy, eligibility, lab and other relevant disparate data sets to manage its 150,000k+



			I will a Datal also to topic
			science ecosystem, HealtheDataLab, to focus on transitioning to value-based care by better understanding its Medicaid (Medi-Cal) population and identifying gaps in care.
The solution preposed by the Vender must have been previously implemented successfully in a State environment. (amended and removed per Addendum #4)			
The Vendor must have at least three (3) years' experience in operation of the proposed solution with a Medicaid Enterprise DW similar size and scope (amended per Addendum #4) to the State's in compliance with all Federal and State regulations.	<u>ES</u>	NO	1. Kansas Department of Health and Environment (Contract Start Date (12/2015) – Contract End Date (12/2022*)  Kansas Modular Medicaid System (KMMS) utilizes our Healthelntent Platform suite of applications and services to support their Medicaid program. We initiated the project and successfully implemented the system, which has passed CMS System Certification back to day one. This alignment has provided KDHE with merged claims, administrative and clinical data with the state's HIE and other EHR data sources. KDHE can now identify trends, key performance indicators, provider metrics, and population segmentation, which enables opportunities to shape the health care outcomes of its members and bend cost curves.  *This contract includes additional optional years.

#### 3. Existing Business Relationships with the State

Describe any existing or recent (within the last five [5] years) business relationships the Vendor or any of its affiliates or proposed Subcontractors have with the State, the State's counties, and/or the State's local municipalities.

Cerner does not currently have a direct relationship with the state of West Virginia. That said, through our private health partnerships, Cerner manages the hospital data of roughly one third of the state population. Marshall Health/Marshall University School of Medicine, a state funded university, is one of our West Virginia clients. Though they do not meet mandatory qualification requirements for this RFP, they are currently in the process of deploying our DW and population health analytic tools and will go live in 2020. The Chief Information Officer of Marshall Health has indicated that he is willing to communicate with DHHR in regard to the scale and complexity of this project. Cerner does not currently maintain a business relationship with any WV counties or local municipalities. Our subcontractor i2i has does not currently have an existing business relationship with the State of West Virginia. Our subcontractor, Tyler Technologies, has had contracts with the Disability Determination Services and the Division of Financial Institutions.



# 4. BUSINESS DISPUTES

Provide details of any disciplinary actions and denote any that are pending litigation or Terminated for Cause or Convenience and associated reasons. Also denote any other administrative actions taken by any jurisdiction or person against the Vendor. List and summarize all judicial or administrative proceedings involving your sourcing activities, claims of unlawful employment discrimination, and anti-trust suits in which you have been a party within the last five (5) years. If the Vendor is a subsidiary, submit information for all parent companies. If Vendor uses Subcontractors, associated companies, or consultants that will be involved in any phase of this project, each of these entities will submit this information as part of the response.

Cerner considers matters of litigation confidential. However, as of the date of this response, Cerner is neither a party to nor is any of Cerner's property subject to any material pending legal proceedings, other than ordinary routine litigation incidental to our business, none of which would have a material adverse effect upon our ability to provide the applications and services quoted in this response. As a public company, Cerner is required to publicly report all material pending legal proceedings and all such information can be found in Cerner's filings with the Securities and Exchange Commission and Cerner's Annual Report, both of which can be obtained under our Investor Relations page (<a href="https://www.cerner.com">www.cerner.com</a>).

Our proposed subcontractor, i2i, is not party to material pending legal proceedings.

The division of Tyler Technologies (formerly MicroPact) responding has not had any contracts terminated for default nor other litigations in the past 5 years. We have had a few contract terminations for convenience over the years, resulting from budgetary constraints or the customer's decision to move in a different direction. We do not track terminations for convenience or contracts which expired and elected not to renew. Information on other Tyler divisions can be provided upon request.

#### 5. REFERENCES

The State may conduct reference checks to verify and validate the past performance of the Vendor and its proposed Subcontractors.

# 5.1 Vendor (Prime) References Form

Include at least three (3) references from projects performed within the last three (3) years that demonstrate the Vendor's ability to perform the scope of work described in this RFP. The Vendor should provide three (3) different clients/projects in order to demonstrate their experience.

Vendor should include project description, contract dates, and contact information (customer points of contact, addresses, telephone numbers, and email addresses). The Vendor should explain whether it performed the work as a prime contractor or as a subcontractor.

The Vendor is NOT to change any of the pre-filled cells in the following tables.

The Vendor may add additional Reference Tables as necessary.



Table 9	Vendor Reference	s (RFP Table 13)

Vendor Information					
Vendor Name: Cerner Corporation	Contact Name:	Stan Park, Advisory Client Accountable Executive			
	Contact Phone:	(504) 377-4801			
Customer Information					
Customer Organization:	Contact Name:	Gene Hermanson			
State of Montana Department of Public Health and Human Services	Contact Title:	Montana Program for Automating and Transforming Healthcare (MPATH) Program Director			
Customer Address: 7 W 6th Ave, Suite 2B, Helena, MT 59601	Contact Phone:	406-841-5021			
	Contact Email:	ghermanson2@mt.gov			

#### Project Information

Total Vendor Staff:

28

#### **Project Objectives:**

Support the State of Montana Department of Public Health and Human Services (DPHHS) compliance with federal rules and federal deadlines by procuring and implementing a system that can process new programmatic requirements due to changes in State and Federal laws. The solution must be flexible, agile and able to quickly adapt to changes in current and future policy options.

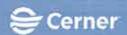
#### **Project Description:**

By implementing advanced population health data analytics, DPHHS will improve Medicaid outcomes through a comprehensive population health management program. It will enable the creation of comprehensive, actionable statistical profiles of health care delivery and utilization, which will allow the Department to create and optimize policies that benefit the entire ecosystem. Cerner sees an opportunity to flatten excess cost and empower the Department to perform meaningful population health management in near real-time.

#### Vendor's Involvement:

#### In the first 18 months of the State of Montana project Cerner accomplished:

- 1. Onboarding of 18 data sources to the HealtheIntent Platform, including claims (i.e.: MMIS), financial, eligibility and clinical data types. While these sources are of varying size and complexity, there are specific use cases for each type of data which has led to numerous benefits for the more than 350 end users across the state. Additionally, as part of data onboarding, most of these sources were mapped to the Cerner Population Record. This has allowed for rapid content deployment and increased focus on reporting strategy, reducing tedious data validation activities. Other key benefits include increased visibility of performance across dozens of program areas in the State (e.g., CPC+, PCMH, and T-HIP) and source data quality improvements as a result of gaps identified by Cerner data teams.
- 2. Deployment of five integrated applications within the HealtheIntent Platform. These applications include: HealtheAnalytics, HealtheRegistries, HealtheDataLab, TMSIS and Federal Reporting. The portfolio of integrated applications has connected providers, department officials, program administrators, business analysts, and other users across the state in new and unique ways most applicable to their respective roles-all while ensuring the appropriate adherence to the security requirements of the State. These connections have enhanced the State's ability to gain insights through Ad-Hoc Reporting, Data Science and Advanced Analytics:



- a. Utilizing our HealtheRegistries application has enabled providers, program staff, and department administrators to view and manage provider quality performance metrics in a single environment with localized views for each user type.
- Utilizing our HealtheAnalytics application, the department can more easily manage dozens of recurring reporting outputs for programs in the state.
- c. Utilizing Data Models for Ad-Hoc reporting needs, what had traditionally taken the Department hours or days, now takes seconds or minutes.
- d. Utilizing the HealtheDataLab application, Cerner Data Scientists have completed a series of research projects with detailed outputs for Department leadership to use in shaping programs in the state. These outputs have included analysis on methods for extending Medicaid Expansion & coverage for support of that population, as well as Homelessness Initiatives in the State.
- 3. Delivery of aggressive speed to value to support program requirements in the State. The first release of the project was deployed in five months and was made up of three data sources (including MMIS), an EDW, two HealtheRegistries, and a handful of supporting reports. Following the speedy delivery of the first release, three other releases followed encompassing 15 more data sources, eight additional registries, seven ad hoc data models, 18 analytics reports, two detailed data science research projects, a CMS production approved TMSIS application, and six federal reports.
- 4. Effective adherence to the evolving needs of the State. As the needs of State or CMS requirements have changed, the Cerner Operations team has been extremely successful in managing the more than 200 related maintenance or enhancement service requests ranging in complexity from one to 500 hours to complete. The most common requests have included adjustments to data models or reports, data source ingestion rules, and deliverable updates. With the success of the planned implementation and an overall confidence in the partnership, the state and Cerner have already begun planning towards future opportunities taking advantage of the foundational components already delivered.

#### **Other Notable Achievements**

- Earned Value Metrics: Averaged a Schedule Performance Index score of .992 for the duration of DDI (eight of 12 monthly status reports indicated an SPI of one).
- Incurred zero financial penalties and received approval of all payment milestones as scheduled (50 SLAs).
- Developed hundreds of unique test cases and deliverables made up of over 3,500 pages of content all easily traceable to the 605 contract requirements.

#### **Project Benefits:**

In Montana, the Department of Public Health & Human Services (DPHHS) came to Cerner with a number of urgent problems in Medicaid management. State employees devoted an inordinate amount of time to aggregating Medicaid data and very little time to evaluating said data. They were heavily reliant on claims data to make decisions, at best, 3 months and typically 9-12 months after the fact, and they had little access to vital clinical data or providers.

Since project kickoff, Cerner's HealtheIntent Platform and applications have provided the state with enhanced reporting capabilities and greater insight into their Medicaid populations. Claims and administrative data from the MES have been merged. In the coming years, clinical data from the state's HIE and other EHR sources will be added to the warehouse. We have also incorporated data-rich clinical sources to draw insight regarding gaps in care, readmission statistics and other opportunities for intervention.

Montana's currently realized value includes:

- DPHHS Value:
  - o Increased focus on oversight and evaluation
  - o Reeducation of provider burden in automation of data capture from EHR
  - Automation of CPC+ payments
  - Risk stratification of entirety of Montana's Medicaid population
  - Real-time population risk score sent to MES monthly



#### Clinician Value:

- Clinicians now have visibility of claims data and coordinated quality measures across payers
- o Identification of care gaps (e.g., eye and foot exam need for patients with diabetes) to reduce hospitalizations and ER visit
- EHR data from two large health systems has been initiated; DPHHS plans to integrate 20 more in the next year

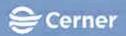
#### • Medicaid Recipient Value:

- Consolidation of member's health records into a single longitudinal record
- Development of foster care view; linked child welfare to Medicaid data and developed a registry
- On-boarding of SNAP and TANF with the potential to incorporate still more data sources

Name: Zach Behlmann	F	Role: Project Manage	er		
Name: Stan Park		Role: Contract Mana	ger		
Name: Lauren Eckard		Role: Testing Lead		<del></del>	
Name: Sean Callahan	F	Role: Integration Lea	d		
Name: Jim Peresta	C	Certification Manage			
Project Measurements:					
Estimated one-time costs: See note be	low A	ctual one-time cost	s: See note belo	W	
Reason(s) for change in one-time cos shared as part of this response.	st: Our one-t	ime costs are confi	dential informati	on and cannot be	
Original Value of Vendor's Contract: \$22,145,436		Actual Total Contract Value: \$22,145,436			
Reason(s) for change in value: As of to at award.	he writing of	this RFP, contract v	alue amount is	the same as valu	
Estimated Start & Completion Dates:	From	03/2018	То:	06/2019	
Actual Start & Completion Dates:	From	03/2018	To:	11/2019	
D () for all files and a formation Field			s extended due t	o reordering of	
Reason(s) for difference between Estir Federal Reports and T-MSIS implement	itation into i				

Table 10: Vendor References (RFP Table 13)

Vendor Information



Vendor Name: Cerner Corporation	Contact Name:	-	
	Contact Phone:	(504) 377-4801	
Customer Information			
Customer Organization: Kansas Department of Health and Environment	Contact Name:	Adam Proffitt	
	Contact Title:	Kansas Department of Health and Environment (KDHE) Medicaid Director	
Customer Address: 900 SW Jackson Ave, Suite	Contact Phone:	785-296-3563	
900 North Topeka, KS 66612	Contact Email:	adam.proffitt@ks.gov	

#### Project Information

15

Total Vendor
Staff:

#### **Project Objectives:**

Kansas Department of Health and Environment (KDHE) is implementing the Kansas Modular Medicaid System (KMMS), following MMIS modularity guidelines defined by Centers of Medicare and Medicaid Services (CMS). Cerner has contracted with KDHE to implement the data warehouse application HealtheEDW as part of KMMS. The Data Warehouse and Analytics (DWA) work performed by Cerner is in support of Module 8 (Mod 8). Medicaid- Merging claims and administrative data from the MMIS with clinical data from the state's HIE and other EHR data sources to support a 360-degree view of their population.

#### Project Description:

KDHE utilizes Cerner's HealtheIntent Platform with a wide range of analytical use applications within the Kansas MMIS. Merging claims and administrative data from the MMIS with plans to integrate clinical data from the state's HIX and other EHR data sources, KDHE accesses historical timeline views (longitudinal record) of the Medicaid members. By doing so, KDHE identifies trends; key performance indicators, provider metrics, and population segmentation that offer the State informed, data driven opportunities to shape the health care outcomes and costs curve. The deployment of Module 8 and the modernization for all modules is a two-stage process. Project timeline:

- Module 8 Stage 1 went live in August 2017. In operations mode until December 2020, contract will
  most likely be extended. Cerner also displaced the Data Analytics Interface (DAI) data warehouse,
  previously managed by Truven. This completed the merging of two data warehouses utilized by KS
  into one utilizing the Cerner Platform. This project went live in October 2018.
- Module 8 Stage 2 has a go live date of July 2021. Cerner executed a contract for design work of Stage 2 in March 2019. Additional change requests for Stage 2 will include construction effort based on the outcomes of design.

#### Vendor's Involvement:

Cerner is responsible for implementing and operating the Electronic Data Warehouse (EDW) for Module 8 using HealtheIntent to include the use of HealtheAnalytics. Cerner is a subcontractor to DXC as the Fiscal Agent (FA) for the State of Kansas Department of Health and Environment (KDHE). As the FA for the MMIS program, DXC has responsibility for 8 modules for the State's Medicaid program.

# **Project Benefits:**



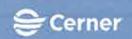
Since project kickoff, Cerner's EDW has enabled identification of hidden trends and underlying variables, onboarded additional data beyond available pre-built content and supported organization-specific imperatives. Recent value achieved includes:

- · Consolidated 23 disparate and sporadically-employed reports into five high-use reports
- Modernized reports to deliver the ability to view data more dynamically
- Represents a 90% reimbursement from CMS for DDI costs
- Placed personnel onsite supporting KDHE Medicaid Staff. These key stakeholders conduct data analysis, report project creation and oversee Medicaid Managed Care Data Analytics Interface workflows.
- KDHE sunset of incumbent: \$1.5M in annual savings

subcontracted activities:

Stage 2 will include the use of the population health record for the Medicaid population in the State of KS. This will allow for whole person management and the 360-degree view of the patient.

This will allow for whole person management and the 360-degree view of the patient.						
Key Personnel						
Name: Anil Kalia	R	Role: Project Manager				
Name: (Add more rows as needed)	R	Role: (Add more rows as needed)				
Project Measurements:						
Estimated one-time costs: See note below	A	Actual one-time costs: See note below				
Reason(s) for change in one-ti shared as part of this response		cost: Our one-tir	ne costs a	re confidential information and cannot be		
	T.	1. 17.110				
Original Value of Vendor's Actual Total Contract Value:  Contract: \$7,436,000 \$10,458,000						
Reason(s) for change in value:				osting		
Estimated Start & Fr	Estimated Start & From: 01/2016		To:	12/2022*		
Completion Dates:				*This contract includes additional optional years.		
Actual Start & Fr	om:	n: 01/2016	To:	12/2022*		
Completion Dates:				*This contract includes additional optional years.		
Reason(s) for difference between Estimated and Actual dates: Not applicable.						
			1 1 1			
If the Vendor performed the wo	k as	a Subcontracto	r, the Vend	or should describe the scope of		



Stage 1 went live September 2017. Cerner ingested data from KDHE's Decision Support System (DSS). Data from the following Medicaid Management Information System (MMIS) modules is in production:

- Module 2 Claims, Business Process Analysis (BPA), Reference and Prospective Drug Utilization Review (ProDur)
- Module 3 Provider
- Module 5 Financial, Third-Party Liability (TPL) and Management and Administrative Report (MAR), Drug Rebate
- Module 6 Managed Care
- Module 7 Service Authorization, Member, Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) and Medicare Management
- Module 9 iTrace and KIP

After Stage 1, Cerner completed additional work to ingest data from the Data Analytic Interface (DAI). KDHE selected Cerner as a DXC subcontractor to replace Truven for the DAI effort. DAI went live in November 2018. Data from the following sources in in production:

- State Employees Health Plan (SEHP)
- Kansas Health Insurance Information System (KHIIS)
   Stage 2 includes
- Modernization of MMIS modules from Stage 1. Cerner will onboard data directly from KMMS modules, with no data coming from the legacy system. Cerner is currently estimating work needed for changes to data sets, universes/data models, and reports.
- Ancillary Sources (non-MMIS). Cerner will onboard data. Currently estimating work to map to the
  population record and create new universes/data models and reports. Consulting with KDHE on how
  this work can add value. Sources include:
  - Kansas Immunization Information System (WebIZ)
  - Kansas Electronic Disease Surveillance System (EpiTrax)
  - Kansas Vital Statistics
  - Kansas Department for Aging and Disability (KDADS)
  - Managed Care Organizations (MCOs): United Healthcare, Sunflower Health, and Aetna
  - Health Information Exchanges (HIE): Lewis And Clark Information Exchange (LACIE) and Kansas Health Information Network (KHIN)

Table 11: Vendor References (RFP Table 13)

Vendor Information		AND DESCRIPTION	
Vendor Name:	Contact Name:	Mary-Louise Froissard	
Cerner Corporation	Contact Phone:	(816) 885-4338	
Customer Information			
Customer Organization:	Contact Name:	William Feaster, M.D.	
CHOC Children's	Contact Title:	VP & CHIO	
Customer Address:	Contact Phone:	(714) 403-1692	
1201 West La Veta Ave Orange, CA 92868	Contact Email:	Wfeaster@choc.org	
Project Information			
Total Vendor Staff: TE resources			
Project Objectives: They were Cerner's first pediatric client to go liv	e with HealtheIntent a	and were a development partner.	



CHOC Childrens partnered with Cerner to implement HealtheIntent applications to achieve their population health management vision and priorities of:

- Improve outcomes through management of clinical conditions
- Increase compliance to evidence-based practices and reduction in gaps in care
- Improve ability to measure quality for sub-specialties
- Enable quality campaigns and programs through efficient stratification and reporting
- Improve publicly facing quality results
- Advance Enterprise Care Management Capabilities
- Improve communication and coordination across continuum of care
- Understand and better control use of continuum and network services
- Evaluate value of care management engagement
- Increase operational efficiencies and productivity
- Decrease cost of care while improving outcomes
- Improve and align documentation to workflows
- Create efficient, dynamic capabilities for identification of targeted populations
- Engage patient in care planning via technology enablement
- Create Actionable Insights through Analytics and Reporting
- Create near real time dashboards for quicker identification and response to opportunities
- Utilize scorecards to better understand results and be proactive with care plan and interventions
- Simplify regulatory and compliance reporting
- Enhance capabilities around risk, cost and utilization
- Ensure data marts and mining capabilities available for each subject area (risk, cost, utilization, quality, care management, etc.)
- Meet all population health reporting needs with Cerner applications
- Enable a comprehensive picture of the full continuum via data onboarding, integration, and infrastructure
- Utilize tools to proactively monitor integration and quality assurance

# Project Description:

- CHOC Children's implemented the suite of Cerner HealtheIntent applications over multiple projects and phases:
  - September 2014: HealtheIntent contract signed
    - CHOC signed as a development partner for pediatric registries.
  - October 2015: Went with HealtheRegistries
    - Focus on Asthma. Specifically, the Asthma Control Test and Asthma Action Plan
    - (please see attached registry highlight)
  - July 2016: Live with HealtheCare (Pilot)
    - Focus on Asthma and Primary Care and were a development partner.
  - September 2016: Live on HealtheEDW
    - Focus on TCPI Grant Reporting at the outset
  - 2017 HealtheDataLab with AWS Development Partner
  - o June 2018: Live with HealtheDataLab (please see client achievement story)
  - o June 2018: Live with Remote Patient Monitoring
    - CHOC is currently piloting Bluetooth-enabled medical devices with a small study group of CHOC patients, to monitor patients' conditions related to cardiology and asthma.
- Project statistics as of Dec 2019:
  - 156, 000 lives in HealtheIntent
  - Data Sources: 8 data sources live in HealtheIntent including claims and EHR data
  - o 11 pediatric specific registries

#### Vendor's Involvement:



CHOC Children's has utilized Cerner's Consulting services and Cerner's Implementation Framework to install all Population Health applications. The projects have been rolled out in multi-phased implementations over the course of their long-term relationship with Cerner. Cerner's Consulting Framework implementation and build methodologies guided the installation and configuration of each project. For each project, Cerner provided a project manager (Engagement Owner), Integration Architects, Consultant(s), Physician Alignment Executive, Physician Executive, Population Health Strategy Executive, and Technical Engagement Leader. Cerner also provided Learning Services Management, including Train the Trainer, End User Training, Adoption Coaching and Change Management. CHOC Childrens has a Cerner Client Accountable Executive who manages the overall relationship and oversight for all projects.

**Project Benefits:** CHOC, located in Orange, California, is an example of where Cerner helped a client achieve success in improving process efficiencies and automating clinical processes. CHOC is comprised of a 279-bed main hospital facility and 35 ambulatory clinics providing both primary and specialty care. In 2015, CHOC announced it will receive \$17.7 million in federal funds to help local providers manage the 1.5 million child population in Orange and San Diego counties. An early adopter of value-based care, CHOC's initiative marks the next step for managing child populations with chronic conditions and taking preventative measures to keep healthy children well. CHOC has been live with HealtheRegistries since October 2015, and the three providers in the pilot program have already increased asthma action plans created by 17 percent and documented control tests by 25 percent—as of end of March 2016.

The control tests assist in building a longitudinal record of a patient's asthma control over time. The documented asthma action plans help to ensure patients leave with an understanding of when to take specific medications, call their doctor or go to the hospital. The project's success is largely dependent on assigning an accountable provider to each individual. More than 26 thousand individuals have been assigned a specified provider.

#### Value Achieved:

- 11 pediatric registries created
- 26% increase in documented asthma action plan
- 47% increase in documented asthma control tests
- 50% of primary care patients received asthma action plans
- 43% of primary care patients received asthma action control tests
- 95,000 of asthma patients given long term control medications
- 24,064 patients enrolled in condition specific registries as of June 2018

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Key Personnel					
Name: Laura Schlenker	Role: Health Network Value Executive				
Name: Angie Cloyd	Role: Engagement Owner				
Project Measurements:					
Estimated one-time costs: See note below	Actual one-time costs: See note below				
Reason(s) for change in one-time cost: Our one-time costs are confidential information and cannot be shared as part of this response.					
Original Value of Vendor's Contract: See below					
Reason(s) for change in value: Our contract value is confidential information and cannot be shared as part of this response.					



Estimated Start & Completion Dates:  A. HealtheRegistries	From:	A & B: 09/2014	To:	A & B: 09/2022
B. HealtheEDW				<u> </u>
Actual Start & Completion Dates:	From:	A. 3/2015	To:	A. 10/2015
A. HealtheRegistries		B. 12/2015		B. 02/2017
B. HealtheEDW				
Reason(s) for difference between Estim	ated and A	Actual dates: N/A		

# 5.2 Subcontractor References (if applicable)

If the Vendor's proposal includes the use of subcontractor(s), provide three (3) references for each subcontractor. The State prefers references that demonstrate where the Prime and Subcontractors have worked together in the past.

Table 12: Subcontractor References (RFP Table14)

Subcontractor Inf	ormation		
Vendor Name:		Contact Name:	Justin Neece
i2i Population Health		Contact Phone:	(615) 561-1190
Customer Informa	ation		
Customer Organi	zation:	Contact Name:	Ashley Pasquariello
Tennessee Primary Care Association (TPCA)		Contact Title:	CQCH Manager/Data Analyst
Customer Address: 710 Spence Lane		Contact Phone:	(615) 329-3823
		Contact Email:	Ashley.pasquariello@tnpca.org
Nashville, TN 3721	7		
Project Information	n		
Total Vendor Staff:	15 i2i staff for initial project		
Project Objective Install and impleme clients since 2014		the initial install/projuent new health cent	ect with TPCA. They are active ers.
Project Description	on: ks® for 12 databases and 60 us	er lieenses within th	a TDCA UCCN. Project began or

6/27/2014. TCPA chose a phased approach to onboard health centers to i2i, bringing on centers



incrementally. Project included technical readiness assessment, installation and implementation of interfaces, data mapping, data validation, and customer training for all health centers and TPCA.

#### Vendor's Involvement:

Vendor lead all data mining and mapping efforts to validate the interface between customer EHR and i2i Product for all TPCA health centers. Vendor uses i2iLinks™, data delivery transport system, a standards-based proprietary interface technology or extract, transfer, and load (ETL) platform that offers predictable and consistent results and supports communication protocols such as HL7, CCD-A over TCP/IP and Web Services. Vendor managed client relations and project with Client success executives, support, and senior project managers.

#### **Project Benefits:**

Through i2iTracks®, TPCA connected to a comprehensive and configurable set of interfaces that powered collection, consolidation, and normalization of all types of data. They have achieved improved clinical and quality outcomes, improved utilization efficiency, improved financial, performance and insight, and improved risk score accuracy. This project assisted in connecting all health centers in the HCCN.

Key Personnel				151, 151	
Name: Anne Enright		Role: Regional D	Pirector of Client S	Services	
Name: Tricia Liles		Role: Client Success Exect		Executive	
Project Measurements:					
Estimated one-time costs: \$615,875		Actual one-time	costs: \$615,875		
Reason(s) for change in one-time cost:	: N/A				
Original Value of Vendor's Contract: \$6	315,875	Actual Total Con	tract Value: \$615	,875	
Reason(s) for change in value: N/A	, <u> </u>		_	· · · · · · · · · · · · · · · · · · ·	
Estimated Start & Completion  Dates:	From:	6/27/2014	То:	Flexible	
Actual Start & Completion Dates:	From:	6/27/2014	To:	2/18/2015	

Reason(s) for difference between Estimated and Actual dates: Differences are from phased approach to the project. TPCA was flexible with onboarding health centers. The following are installation/end-dates for the project health centers:

- 9/18/2014
- 9/19/2014
- 10/15/2014
- 12/11/2014
- 12/17/2014
- 12/18/2014
- 12/19/2014
- 12/19/2014
- 1/14/2015
- 2/4/2015
- 2/18/2015



If the Vendor performed the work as a Subcontractor, the Vendor should describe the scope of subcontracted activities: N/A

Table 13: Subcontractor References (RFP Table14)

Subcontractor Information		
Vendor Name:	Contact Name:	Justin Neece
i2i Population Health	Contact Phone:	(615) 561-1190
Customer Information		
Customer Organization:	Contact Name:	Eric Medina
Altura Centers for Health	Contact Title:	QI Coordinator
Customer Address:	Contact Phone:	(559) 631-4022
1201 N. Cherry St Tulare, CA 93274-2233	Contact Email:	emedina@altura.org

#### Project Information

Total	Vendor
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10 i2i Staff

Staff:

#### **Project Objectives:**

Install and implement i2i Tracks for Altura Centers for Health. This is the initial install/project with Altura. They are active clients since 2006.

#### **Project Description:**

Implement i2iTracks® for 1 database and 5 user licenses. Project began on 3/13/2006. Project included technical readiness assessment, installation and implementation of interfaces, data mapping, data validation, and customer training for Altura.

# Vendor's Involvement:

Vendor lead all data mining and mapping efforts to validate the interface between customer EHR and i2i Product. Vendor uses i2iLinks™, data delivery transport system, a standards-based proprietary interface technology or extract, transfer, and load (ETL) platform that offers predictable and consistent results and supports communication protocols such as HL7, CCD-A over TCP/IP and Web Services. Vendor managed client relations and project with Client success executives, support, and senior project managers.

#### **Project Benefits:**

Through i2iTracks®, Altura connected to a comprehensive and configurable set of interfaces that powered collection, consolidation, and normalization of all types of data. They have achieved improved clinical and quality outcomes, improved utilization efficiency, improved financial, performance and insight, and improved risk score accuracy.

Key Personnel	
Name: Scott Goebel	Role: Sr. Project Manager
Name: Evan Colby	Role: Client Success Executive
Project Measurements:	



			Actual one-time costs: \$35,560		
/A					
Original Value of Vendor's Contract: \$35,560		t Value: \$35,5	60		
From:	3/13/2006	To:	3/27/2006		
From:	3/13/2006	To:	3/27/2006		
ed and Act	tual dates: N/A				
	From:	560 Actual Total Contract From: 3/13/2006	560         Actual Total Contract Value: \$35,5           From:         3/13/2006         To:           From:         3/13/2006         To:		

Table 44: Cubecaterates Defendance (DED Table 44)

Vendor Name:	Contact Name:	Justin Neece	
i2i Population Health	Contact Phone: (615) 561-1190		
Customer Information			
Customer Organization:	Contact Name:	Leslie Myrick	
Borrego Community Health Foundation	Contact Title:	Quality Improvement Coordinator	
Customer Address:	Contact Phone:	(760) 767-5051	
4343 Yaqui Pass Rd PO Box 2369 Borrego Springs, CA 92004	Contact Email:	Imyrick@borregohealth.org	

**Total Vendor** 10 i2i Staff Staff:

# **Project Objectives:**

Install and implement i2i Tracks for Borrego Community Health Foundation. This is the initial install/project with Borrego. They are active clients since 2009.

# **Project Description:**

Implement i2iTracks® for 1 database and 5 user licenses. Project began on 2/4/2009. Project included technical readiness assessment, installation and implementation of interfaces, data mapping, data validation, and customer training for Borrego.

#### Vendor's involvement:



Vendor lead all data mining and mapping efforts to validate the interface between customer EHR and i2i Product. Vendor uses i2iLinks™, data delivery transport system, a standards-based proprietary interface technology or extract, transfer, and load (ETL) platform that offers predictable and consistent results and supports communication protocols such as HL7, CCD-A over TCP/IP and Web Services. Vendor managed client relations and project with Client success executives, support, and senior project managers.

# **Project Benefits:**

Through i2iTracks®, Altura connected to a comprehensive and configurable set of interfaces that powered collection, consolidation, and normalization of all types of data. They have achieved improved clinical and quality outcomes, improved utilization efficiency, improved financial, performance and insight, and improved risk score accuracy.

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Key Personnel				
Name: Scott Goebel		Role: Sr. Project Manager		
Name: Evan Colby		Role: Client Suc	cess Executive	
Project Measurements:				
Estimated one-time costs: \$40,000		Actual one-time	costs: \$40,000	
Reason(s) for change in one-time co	ost: N/A			
Original Value of Vendor's Contract:	\$40,000	Actual Total Co	ntract Value: \$40,0	000
Reason(s) for change in value: N/A	, , <u> </u>			
Estimated Start & Completion	From:	2/4/2009	To:	6/10/2009
Dates:				
Actual Start & Completion Dates:	From:	2/4/2009	To:	6/10/2009
Reason(s) for difference between Es	stimated and Act	ual dates: N/A		
If the Vendor performed the work as subcontracted activities: N/A	a Subcontracto	r, the Vendor sho	ould describe the s	cope of

Table 15: Subcontractor References (RFP Table 14)

Subcontractor Information		
Vendor Name:	Contact Name:	John Jurkin
Tyler Technologies	Contact Phone:	(919) 518-7871
Customer Information		
Customer Organization:	Contact Name:	Jeffrey Chan
United States Department of Transportation Office of Inspector General	Contact Title:	IT Specialist (COR)
Customer Address:	Contact Phone:	(202) 366-2500



1200 New Jersey Washington, DC		Contact Email:	Jeffrey.chan@oig.dot.gov
Project Informa	tion		
Total Vendor Staff:	2		

#### **Project Objectives:**

DOT/OIG selected Tyler's COTS product Entellitrak® to provide a new replacement solution to the legacy "TIGR" System.

#### **Project Description:**

DOT/OIG is responsible for investigating allegations of fraud, waste, and abuse in Departmental programs, operations, and funding/grant recipients. DOT/OIG coordinates the results of their investigative findings with the various Departmental operating administrations, State and local transportation agencies, other Federal investigative and oversight agencies, Federal and State prosecutors, and the Congress. In addition to being configurable, Entellitrak® provides tracking and reporting capabilities needed to facilitate transparency and accountability of investigative and audit activities in support of the criminal investigative mission. The system receives evidence from the public Hotline and investigators that is used to build a case and initiate prosecution. Once a case is accepted for prosecution, Entellitrak® manages processing events leading up to convictions and sentencing. The system makes all information accessible to key players in the process, as well as senior management. The system reviews case activity to generate reports on overall OIG performance. This includes tracking progress on IG initiatives, phases, and outcomes.

#### Vendor's Involvement:

Tyler provided the licenses as well as performed all the professional services such as configuration, quality assurance, testing, hosting and support. The Entellitrak® software was provided with the reporting and time keeping modules. Over the course of the contract, several contracts were added to configure the Entellitrak® software for use as the case management system extended its functionality.

#### **Project Benefits:**

- Improved reporting functionality, including ad hoc reporting and searching
- Automated workflows for more efficient processing of cases
- Automated validations for tighter system controls.
- Ability to associate documents to investigations and cases

Key Personnel	
Name: Courtney Tynes	Role: Business Analyst - Support
Name: Joshua Holmes	Role: Senior Support Manager
Project Measurements:	
Estimated one-time costs: Confidential	Actual one-time costs: Confidential
Reason(s) for change in one-time cost: Not applica	able.
Original Value of Vendor's Contract: Confidential	Actual Total Contract Value: Confidential
Reason(s) for change in value: Additional projects a contract for this project.	and Program Change Requests. Note: This is the latest



Estimated Start & Completion Dates:	From:	9/19/2007	То:	9/01/2020
Actual Start & Completion Dates:	From:	9/19/2007	To:	

If the Vendor performed the work as a Subcontractor, the Vendor should describe the scope of subcontracted activities: Tyler worked on this project without any subcontractors.

Table 16: Subcontractor References (RFP Table14)

Subcontractor Information		
Vendor Name:	Contact Name:	John Jurkin
Tyler Technologies	Contact Phone:	(919) 518-7871
Customer Information		
Customer Organization:	Contact Name:	Amy Chartier
Wisconsin Department of Health Services, Division of Medicaid Services, Office of IRIS Management	Contact Title:	Section Chief (IRIS Management)
Customer Address:	Contact Phone:	(608) 267-7205
1 W. Wilson Street	Contact Email:	Amy.Chartier@dhs.wisconsin.gov
Room 655		
Madison, WI 53703		

# **Project Information**

Total Vendor Staff:

8

# **Project Objectives:**

The system empowers a consultant to effectively manage a participant from referral through determination, supporting goals, plans, services, and outcomes for Wisconsin's IRIS (Include, Respect, I Self-Direct) program: Some of the benefits as a result of the implementation are:

- Secure, central access to program information for all stakeholders, including beneficiaries
- Operational transparency for legislators and DHS, DOJ, and OIG analysts
- Automated validations for tighter system controls

# **Project Description:**

The Wisconsin Department of Health Services uses Entellitrak® to support its Medicaid Self-directed Long-Term Care (LTC) Benefits Program, known as IRIS (Include, Respect, I Self-Direct). The \$500 million (annualized) program is one of the largest Medicaid Home and Community-Based Services 1915(c) waiver programs in the country. IRIS enables approximately 16,000 eligible adults to choose the LTC services they receive in their home and communities, resulting in better outcomes for participants and annual savings for the state of Wisconsin. Participants take pride in managing their services within allocated amounts. In 2014 alone, they spent \$44 million below what the full service budget allowed. More than 1,000 users from 14 different agencies access the web-based Entellitrak® solution to coordinate services and support LTC outcomes for IRIS participants, authorize and disburse payments to



service providers, and manage and report on the program. They include social workers, nurses, and fiscal employer agents, as well government analysts. Some of the challenges that were overcome on this project are listed below:

- · Wisely spending limited Medicaid funds to optimize beneficiary outcomes
- Siloed information stored by contracted agencies in disparate systems
- Ensuring program integrity

# Vendor's Involvement:

Tyler provided the licenses as well as performed all the professional services such as configuration, quality assurance, testing, hosting, and support.

# **Project Benefits:**

- Secure, central access to program information for all stakeholders, including beneficiaries
- · Operational transparency for legislators and DHS, DOJ, and OIG analysts
- Automated validations for tighter system controls.

Key Personnel				
Name: Elsa Ma	Role: Project Manager			
Name: Randy Clanahan		Role: Technical Lead		
Name: Gwenna Bedwell		Role: Business Analyst		
Name: Lloyd Jose		Role: Quality Assurance		
Project Measurements:				
Estimated one-time costs: Confidential	Actual one-time cost	ts: Confidentia		
Reason(s) for change in one-time cost:	Not applicab	le.		
Original Value of Vendor's Contract: Co	onfidential	Actual Total Contrac	t Value: Confi	dential
Original Value of Vendor's Contract: Co Reason(s) for change in value: Addition				dential
				dential
				9/30/2022
Reason(s) for change in value: Addition Estimated Start & Completion	nal projects a	nd Program Change	Requests.	
Reason(s) for change in value: Addition  Estimated Start & Completion  Dates:	ral projects an	3/28/2014 3/28/2014	Requests. To:	

#### Table 17: Subcontractor References (RFP Table14)

Subcontractor Information		
Vendor Name:	Contact Name:	John Jurkin
Tyler Technologies	Contact Phone:	(919) 518-7871



Customer Information				
Customer Organization:	Contact Name:	Michael LeLouis		
California Department of Social Services State Hearing Division	Contact Title: Presiding Administrative I			
Customer Address:	Contact Phone:	(916) 309-3291		
State Hearings Division, Northern Regional Office California Department of Social Services 744 P Street Sacramento, CA 95814	Contact Email:	Michael.LeLouis@dss.ca.gov		

# **Project Information**

Total	Vendor
Staff:	

2

#### Project Objectives:

The Appeals Case Management System was implemented to expedite CDSS' federally- mandated appeal process that touches several of the State's largest Welfare and Social Services programs saving the State time and money. The solution's goal was to improve operations for the SHD Administrative Law Judges and support staff in Sacramento and the three Regional Offices located throughout the State.

### **Project Description:**

For the California Department of Social Services (CDSS), Tyler, along with their partner, implemented the Entellitrak®-based Appeals Case Management System (ACMS). The SHD currently hears appeals from numerous California public assistance programs, internal and external to CDSS, including the state TANF, SNAP, Medicaid program – Medi-Cal and Child Welfare Services. This is relevant to WV DPHHS in that the ACMS system provides for a centralized location of all data and allows internal staff members to communicate with their clients via an external portal. The Entellitrak®-based Appeals Solution is a single case management database that combines intake, scheduling, reporting, hearing, decision writing, and decision dissemination functionalities into configurable workflows driven by business rules. ACMS has a public portal that allows the public to request a new hearing, upload documents or check the status of an existing hearing online.

#### Vendor's Involvement:

Tyler provided the hosting, licenses and the Entellitrak® software. Additionally, they also provided Professional Services to their partner during the implementation of the project.

#### **Project Benefits:**

ACMS now provides a modern, single case management system for 450 concurrent users that combines all the functionality listed above for responsible agencies across the state of California, including California Department of Social Services, all 58 counties throughout CA, Department of Health Care Services and Covered California, CA's Affordable Healthcare Act health insurance marketplace. ACMS reduces the average life cycle of an appeal case from receipt of the Hearing Request to release of the decision.

Name: Courtney Tynes	Role: Business Analyst - Support
Name: Joshua Holmes	Role: Senior Support Manager



Estimated one-time costs: Confidential	Actual one-time costs: Confidential					
Reason(s) for change in one-time cost:  Not applicable.						
Original Value of Vendor's Contract: Confidential Actual Total Contract Value: Confidential						
Reason(s) for change in value:  Not applicable.						
Estimated Start & Completion From: Dates:	8/28/2017	То:	10/24/2020			
Actual Start & Completion Dates: From:	8/28/2017	To:				
Reason(s) for difference between Estimated and Actual dates: Not applicable.						
If the Vendor performed the work as a Subcontracto subcontracted activities: Tyler provided Professional Lead, Software Engineers, Technical Support, Hosti	Services in the are	a of Business Le				

# 6. FINANCIAL STABILITY

The Vendor should provide the following components for this section:

# 6.1 Dun & Bradstreet (D&B) Ratings

The Vendor should provide the industry standard D&B ratings that indicate its financial strength and creditworthiness, assigned to most U.S. and Canadian firms (and some firms of other nationalities) by the U.S. firm D&B. These ratings are based on a firm's worth and composite credit appraisal. Additional information is given in credit reports (published by D&B) that contain the firm's financial statements and credit payment history.

Our Dun & Bradstreet number is 04-241-0688. Our rating is 5A2.

# 6.2 Financial Capacity

The Vendor should supply evidence of financial stability sufficient to demonstrate reasonable stability and solvency appropriate to the requirements of this procurement.

As a publicly traded company, Cerner is entirely transparent. Our financial strength and history of success are well-documented. Over the past ten years, Cerner's revenue has grown 220% to \$5.37B.

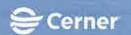


Our strong commitment and vision for the future of healthcare continues to guide our large investments in research and development. Since our inception, we have invested over \$7 billion in organic research and development, which is more than 15 percent of our total historical revenue. We have spent roughly \$700 million in R&D in each of the past three years and anticipate maintaining that level of R&D spending through 2020. Our dedication to research and development is only one reason that in 2017 *Forbes* ranked Cerner as one of the top 100 "Most Innovative Companies in the World" across all industries for the sixth consecutive year. For additional details on financial stability, please refer to our Annual Report found on the Investor Relations page of Cerner.com.

In the following table, please list credit references that can verify the financial standing of your company.

Table 18: Credit References (RFP Table 15)

INSTITUTION	ADDRESS	PHONE NUMBER
U.S. Bank	120 W. 12 <sup>th</sup> Street, Kansas City, MO 64105	Donna Grider- RM, 816-871-2131
Bank of America	1200 Main Street, KC, MO 64105	Brad Butler- RM, 816-292-4252
PNC	10851 Mastin Street, Suite 700	Kyle Myers- RM, 913-353-2521
Commerce Bank	1000 Walnut Street, KC, MO 64106	Jeff Turner-RM, 816-234-2485



# ATTACHMENT D: PROJECT ORGANIZATION AND STAFFING APPROACH

Instructions: Staffing strategies are to be employed by the Vendor to ensure all requirements and service levels are met to the satisfaction of DHHR. The evaluation of the Vendor's staffing approach shall be based on the ability of the Vendor to satisfy the requirements stated herein. Therefore, the Vendor should present detailed information regarding the expertise of the proposed staff and an Initial Staffing Plan.

For ease of formatting and evaluation, *Attachment D: Project Organization and Staffing Approach* provides the required outline for the Vendor's response to staffing. The Vendor's response to the following should not exceed 25 pages, excluding key personnel resumes and the forms provided in this Attachment.

Please refer to Appendix 3: Staff Qualifications, Experience, and Responsibilities of the RFP for the details pertaining to staff qualifications, experience, and responsibilities.

# 1. INITIAL STAFFING PLAN

As part of the Vendor's bid response, the Vendor should provide an Initial Staffing Plan. In addition to the requirements described in *Attachment F: Mandatory Requirements* and *Appendix 1: Detailed Specifications*, the Vendor's narrative description of its proposed Initial Staffing Plan should include the following:

- A succinct description of the Vendor's proposed project team and should exhibit the Vendor's ability and capability to provide knowledgeable, skilled, and experienced personnel to accomplish the Scope of Work (SOW) as described in this RFP.
- A detailed proposal for providing all resources necessary to fulfill the requirements as specified in this RFP. This includes details covering not only key staff but support staff.
- Organization charts for implementation and maintenance stages showing both the Vendor staff and their relationship to State staff that will be required to support the project. The organization chart should denote all key staff for this project, and a summary of each key member's high-level responsibilities.
- A narrative describing tools and processes used to screen available staff to fill positions.
   In addition, a narrative describing the process for replacing key staff within defined timeframes, and procedures for backfilling key staff during any transition.
- Resumes (not to exceed two (2) pages each) for the key staff and support staff members assigned to this project including their licenses, credentials, and experience. DHHR considers the key staff resumes as a key indicator of the Vendor's understanding of the skill sets required for each staffing area.
- A letter of intent for each proposed staff member not currently employed by the Vendor.
   Each letter of intent should be signed by the named individual, indicating that the individual is willing to accept employment if the Vendor is awarded the contract.
- A description and diagram of the proposed staffing for each phase of the project.
- identification of subcontractor staff, if applicable.

# **Initial Staffing Plan**

Cerner has defined our organizational structure and staffing levels based on the requirements in the RFP and our experience in delivering EDS projects. We have staffed large and complex healthcare applications for over forty years, including the design, development, and implementation (DDI) of EDW and analytics projects over the past twenty plus years. We will



provide to the Department a West Virginia EDS-specific Initial Staffing Plan (ISP) that is designed and developed in collaboration with DHHR. The ISP includes critical information to help understand and manage project resources including reporting structures, roles and responsibilities, and recruitment practices. Cerner and DHHR will facilitate project success by developing and updating the ISP with transparent, effective, and timely communication.

The ISP is a component of the larger Project Management Plan (PMP) and describes Cerner and DHHR stakeholders project staffing, resourcing, and personnel change details. This methodology applies Project Management Body of Knowledge (PMBOK®) best practices to aid in the management and monitoring of allocation and activities throughout project implementation. Proposed Account Manager Stan Park and proposed Implementation and Operations Manager Anil Kalia will maintain this plan throughout the life of the EDS project, making updates as needed, and following the established change management process. Please refer to the *Draft Initial Stafing Plan* document within Attachment L: Additional Attachments located in the technical proposal.

#### The Cerner Team

Our vision is to support West Virginia in driving change for the programs delivered to Medicaid recipients by empowering state agencies with modernized capabilities in a single data analytics platform. Through services, tools, and unique data constructs inclusive of multiple data types, Cerner's solution will help the state shift to a proactive management model lending itself to deep, contextual insight on the key challenges West Virginians face in providing a stage for action to improve member outcomes.

Cerner supplies in-depth industry knowledge and a team of experts to drive your vision forward. Our experienced, high-performing associates are committed to successfully deploying this EDS in support of West Virginia's efforts to implement a modern and modular solution. We have considered the unique requirements present in the RFP and we have assembled a premier team to meet the scope and definition of the EDS project.

#### **DHHR Benefit**

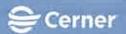
Unparalleled team experience to exceed the skills to meet West Virginia goals

# **Cerner Team Brings**

- Staffing Approach aligned to CMS standards and agile deployment methodology
- Hands-on leadership team with decades of combined experience
- Deep and wide Medicaid expertise including Federal Reporting, TMSIS, Analytics, Clinical Decision Support, Data Management, MITA Certification, and Modularity
- Experience providing HMO/MCO oversight guidance to Medicaid agencies to better inform policy decisions
- MES implementation experience delivering on-time, on-budget deliverables, and solution capabilities.

# **Approach to Resources**

For this EDS project we assembled the best minds from within our organization and from across the market to deliver your EDS with the innovation, expertise, and insights needed to excel in the evolving modular Medicaid market. Our staffing plan leverages these corporate resources and state-specific resources working in tandem to meet the needs of the EDS project. DHHR will benefit from the application of industry best standards, collaboration in the implementation process, and future thinking to propel delivery of targeted outcomes and to maximize return on investment.



Today, our staffing resources include experts from across the public, private, and government sectors, such as the industry's top Medicaid, data science, and IT vendors. They bring insight from decades of supporting Medicaid programs across the nation and a broad view of the modular Medicaid market. Moreover, they bring expertise in areas that are critical to the EDS. including federal reporting, T-MSIS, and CMS Certification for maximum federal funding. We are data scientists, clinical specialists, engineers, pharmacists, physicians, project managers and more, and we will help you to best leverage your technology for project optimization.

#### SIX MONTHS

# Timeline of successful Phase 1 implementation of the Montana Module

The Cemer advitange brings key staff assigned to this EDS project and the full support of the Cemer brain trust. Our commitment is to deliver outcomes within the projected timeframe. We are experienced with aggressive timelines and stringent CMS requirements as demonstrated by our successful six-month implementation of phase one of Montana's module to meet a critical CMS obligation. The application of agile principles of resource management and a phased

# EDS Visibility at the Highest Levels of our Corporate Structure

Our goal is to deliver to DHHR the highest possible value for this EDS project. To ensure transparency throughout each project phase, we have planned for visibility and executive sponsorship of the EDS from the PMO to the highest levels of our corporate structure. Our team will address current stakeholder needs while maintaining future state plans with the full support of our expert resource pool. Figure 3 Strategic Growth Pillar

Our staffing approach is driven by the Strategic Growth pillar of our operating model and includes experts drawn from our Population Health and State Government Organizations, as well as from our project-dedicated West Virginia EDS team.

- Strategic Growth Pillar—One of the four corporate pillars of Cerner's operating model. We leverage our expertise and considerable assets to overcome typical and unplanned barriers to entry and pursue opportunities to drive growth.
- Population Health Organization—Our population health experts work in close collaboration with our State Government Organization to bring leading-edge technology and expertise to our MMIS strategy, leveraging experience with global health systems, Accountable Care Organizations, and other health care initiatives.
- State Government Organization—Positioned between the West Virginia team and our population health experts, our experienced state specialists oversee Medicaid enterprise services capabilities and the platform roadmap.
- West Virginia EDS Team—Executes the day-to-day scope of work requirements fully supported by the organizations listed above.

Bolstering this internal support network are the insights and broad expertise gained through the strategic partnerships we've formed through our Strategic Growth organization. The Department will have access to the breadth and depth of our organization's resources throughout this EDS





project. However, you will also benefit from access to our external partners in team knowledge sharing sessions to remain agile in the face of an ever-developing market.

# Strategic Growth Pillar

Cerner has established strategic partnerships with national leaders of public and private medical, population health, and government industries. Our key focus in seeking these partnerships is to better address the evolving needs of the Medicaid market, including data as a service, engagement of members, and the state of payment-based models. Led by Executive Vice President of Strategic Growth Donald Trigg, Strategic Growth positions Cerner to apply the best-of-breed technology and innovative strategies conceived by our most seasoned and knowledgeable expert partners to redefine the health care landscape. Our partners bring specialized knowledge in the modular Medicaid environment and the innovative Platform that will deliver the outcomes required by MITA and CMS. Ultimately, the goal we all share is to improve the health outcomes and efficacy of health care delivery for your Medicaid population.

We recently partnered with i2i Population Health to identify specific strategies to improve quality of care and reduce costs for state Medicaid members. We've also expanded our relationship with naviHealth, a market leader in post-acute care management and care transitions, to launch a new offering for U.S.-based health care systems that support BPCI Advanced. This relationship will establish an industry-leading, comprehensive offering to better support our clients' mission to deliver affordable, high quality care.

# Population Health Organization

Your overarching EDS project support will flow directly from Cerner leadership. We are innovators and executives who are driven to advance industry standards. Our thousands of Cerner engineers and solution experts develop the technology to make these standards possible, empowering our leading-edge platform to provide the Platform and applications for your data analytics and enterprise data warehouse needs. Our Population Health Organization leaders and associates are readily available to confer with DHHR on industry trends, data and technology, and evolving security needs. You will be invited to join our quarterly Executive Governance Relationship sessions with our largest healthcare partners and State Medicaid clients to discuss industry trends and needs.

DHHR will gain a wealth of resources with at the highest levels of our corporate structure. The EDS will have direct access to and ongoing support from Cerner's consulting infrastructure. Below, you will find descriptions of the Population Health Leadership team members best suited to serve the unique needs of West Virginia.



Ryan Hamilton Senior Vice President

- Ryan drives innovative business strategies to optimize quality, lower costs, and improve the health of populations.
- He was instrumental in the development of Cerner's HealtheIntent Platform and population health applications, and he has nurtured a leadership team that has delivered on the shared mission of our largest data foundation clients.





Adam Christmann Vice President & General Manager, Analytics

- Adam supports Cerner's provider, payer, government, and employer markets.
- He develops innovative strategies to position our population health applications to ensure a higher quality of patient care.



Don Kleoppel, CISSP, CCISO Vice President & Chief Security Officer

 Don oversees Cerner's enterprise security program. His domains include cybersecurity, security governance risk, security architecture, identity and access management, physical security, and associate safety.



Marc Elkins
Vice President, Associate
General Counsel & Chief
Compliance Officer

- Marc champions all Cerner activities related to the development, oversight, adherence to Cerner's privacy policies and procedures pertaining to protected health information (PHI) and personally identifiable information (PII).
- He leads a cross-organizational privacy team and oversees management reporting and budgetary control of privacy activities, and he supports ongoing key initiatives that impact privacy.



Angie Glotstein Director, Healthe Intent Strategy

- Angie designs the complex logic that powers HealtheIntent and manages organizational growth and content development across the platform.
- She founded Knowledge and Terminology, a fast-growing Cerner business unit that focuses on the development of algorithms, proprietary mapping, and data intelligence on the HealtheIntent Platform.



Eva Karp, DHA, RN-BC, FACHE Senior Vice President & Chief Clinical & Patient Safety Officer

- Eva focuses her efforts on clinical and regulatory strategies and markets and drives strategies for the tenets of patient safety.
  - She engages with client organizations to better understand and address their needs and optimize clinical workflows and assists organizations in navigating changes and trends in health care.



Tehsin Syed
Vice President, Population
Health Development

- Tensin leads our population health development teams for the HealtheIntent Platform, targeting the health of populations including care management, registries, longitudinal record, and analytics.
- Tehsin develops solutions to manage the financial, network, and contract needs for health systems as they move towards risk-bearing models.





Michelle Miller
Senior Director & IP Strategist,
Strategic Growth

- Michelle focuses on data strategy within the Healthelntent Platform, enabling decision support, quality measurement, and analytics for population management.
- She serves as a Health Level Seven International (HL7) Patient Care co-chair and a member of the HL7 Argonaut Fast Healthcare Interoperability Resource Team (FHIR) to enhance and refine the FHIR specification, impacting international interoperability standards.



John Travis
Vice President & Regulatory
Strategy Executive

- John provides analysis and guidance for Cemer's business solutions and medical devices and addresses the changing regulatory requirements of CMS/Medicare payment rules.
- John is intimately familiar with HIPAA, federally mandated EHR certification programs, and other similar requirements for federal health programs. He assists clients by leading their efforts to define the impact of these regulations on Cerner's solutions.



Brandi Lawson Senior Compliance Manager

 Brandi specializes in compliance leadership for the health and financial IT services industries. She boasts extensive experience in leading large regulatory compliance teams and helped to establish Cerner's processes to meet federal regulatory requirements.

# State Government Organization

To complement the talent of the Population Health team, Cerner's State Government Leadership team, seen below, brings its expertise to DHHR and all of our Medicaid clients. This organization will be engaged at every level of the EDS project, assisting the team on the ground insight gained from lessons learned in similar projects. The State Government Organization's leadership shares your goal of project success and is happy to support DHHR stakeholders throughout this project.



Jennifer Conner Senior Director & General Manager, State & Public Health

- Jennifer has over 20 years of experience in health care technology, including strategic consulting, implementation, solution strategy, design, architecture, account management, and project management.
- She provides executive leadership for strategy, solution development, and implementation efforts associated with our state government teams.



Jake Engle
Director, State & Public Health

- Jake is a solution expert with over 15 years' experience in health care technology, strategy, operations, and project management.
- He is a member of the Private Sector Technology Group (PSTG) and oversees Cerner's Medicaid market design, deployment, implementation, and operations for all state government projects.





Dustin Bennett Technical and Data Manager

- Dustin coordinates work across several teams within Cerner, including engineering, sales, technical teams, and report writing. He manages the design, maintenance, procedures, and architecture related to data and systems documentation.
- Dustin has deep experience working with System Integrators in the CMS Modularity framework.



Kyle Gagnon, PhD Manager, Sr. Data Scientist

- Kyle leads a team of data scientists in the development of predictive algorithms and statistical modeling for State Medicaid and Public Health.
- He leverages expertise in human behavior and statistics with a wealth of healthcare data to produce quality outcomes for clients and members.



Cara Anderson
Director & Support Executive

- Cara leads a team of over 250 associates who provide support for 20 different applications.
- Cara has achieved significant improvements in client-facing support services and works to integrate over 20 teams into a common support model focused on problem management, client satisfaction, and continuous improvement.



Zach Behlmann, PMP Engagement Executive

- Zach is a client engagement executive and certified project management professional with nearly 10 years of experience leading complex projects.
- Under Zach's leadership, Cerner has met aggressive timelines and overall
  expectations for the HealtheIntent Platform implementation for Montana
  Medicaid project, which was the first population health focused module in the
  history of the Medicaid industry.

#### **Key Staff**

Our key staff will manage and perform the functions for this EDS project. They will leverage the tools recommended by State Government leadership and are backed by a dynamic team with hundreds of combined years of experience to meet the activities and tasks outlined in the RFP.



Stan Park, PMP Account Manager

- Stan brings over 20 years of experience in IT, business development, contract management, and program management.
- Stan will be responsible for overall delivery of the project and serve as a liaison with DHHR during all phases of the contract. This includes establishing and maintaining a positive client relationship and providing timely and informed responses to all DDI, operational, and administrative inquiries that arise.





Ashok Ramanjanappa, **PMP** Project Manager

- Ashok has been working with State Medicaid agencies for the past 13 years. He has served as project lead for several information systems projects over the past 17 years and is a highly accomplished, energetic, trusted, detailoriented, decisive senior executive.
- Ashok will provide onsite management of the project and act as the chief liaison for the State for implementation project activities as well as the project's maintenance and operational phase. He is authorized to make dayto-day project decisions and will ensure timely and effective execution of all project tasks.



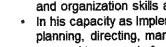
Ross Merritt, MPH Business Lead

- Ross has over 15 years of experience in population health and healthcare data management, including more than five years of experience working directly with the MT, KS, and NV State Medicaid agencies.
- Ross will serve as a liaison among stakeholders to ensure adherence to the structure, policies, and operations of DHHR. This includes managing business analyst resources, assigning tasks, overseeing work products and their completion, monitoring the schedule, and ensuring resources are utilized efficiently and effectively.

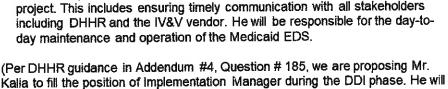


**Nathan Gray Technical Lead** 

- Nathan brings to DHHR 15 years of experience in engineering, project management, implementation, and strategy. In his current role, Nathan leads Cerner's business development and strategic approach for several analytic applications, including out-of-the-box and custom analytics.
- Nathan will serve as the primary point of contact for the contractor's technical staff with the State and as the primary technical subject matter expert (SME). He is knowledgeable of all phases of technical applications system analysis and programming.



- Anil is a Certified Project Management Professional with over 15 years expertise in managing projects with excellent management, communication, and organization skills across various functional areas.
- In his capacity as Implementation Manager, Anil will perform day-to-day planning, directing, managing, and overseeing the implementation, and will respond to requests for information or resolution of comments from the IV&V contractor. Anil will provide timely communication of project status and progress to key stakeholders and communication of project information to project team members.
- Upon transitioning to the Operations Manager role, Anil will remain highly involved through the solution deployment, certification, operational, and maintenance activities of the Medicaid EDS to ensure a smooth transition from the implementation to the maintenance and operations phase of the project. This includes ensuring timely communication with all stakeholders day maintenance and operation of the Medicaid EDS.



transition to the Operations Manager role for the M&O phase of the contract.



Anil Kalia, PMP Implementation Manager and Operations Manager





Jim Peresta Certification Lead

- Jim has more than 30 years of experience working in planning, design, development, implementation, and operations management of MMIS systems in 14 states. He served as MMIS Program Manager in the state of Vermont and participated in Vermont's R3 Certification Final Milestone Review of their Pharmacy Benefit Management (PBM) module and obtained approval of CMS Certification in the first quarter of 2018.
- Jim will ensure that system functionality and business operations fulfill the Medicaid certification checklist criteria, artifacts requirements, and any other information required to achieve CMS certification.



Scott McLeroy, PMP
Documentation Management
Lead

- Scott brings more than 25 years of client-centered relationship and project
  management experience with expertise in leading top performing teams from
  RFP through completion. Prior to joining Cerner, Scott held health care
  consulting roles focused on project management, M&A transaction advisory,
  and strategy consulting at RSM.
- Scott will manage all tasks related to project documentation processes in accordance with the RFP requirements, organizational policies, and objectives. This includes planning and directing documentation projects for timely delivery of documents, publications, and online content.



Amy Henry, PMP
Quality Assurance Manager

- Amy has over 16 years of experience in software development, testing, quality assurance processes, and portfolio management, which includes training, testing, documentation, and certification workstreams.
- Amy will perform oversight for all quality assurance functions, including deliverable review, accuracy of reports, solution documentation, and the review of test results. This includes developing, executing, and maintaining the Quality Management Plan and establishing and executing all QC processes.



Lauren Eckhard, MPA, PMP Testing Manager

- Lauren brings more than 10 years of Medicaid experience and, today, oversees all project testing activities, performs quality control on test scripts and evidence, maintains a detailed view of testing status, and produces test results and other documentation, as needed.
- Lauren will perform planning for all testing (e.g., volume, regression, etc.), management of test resources and test environments, oversight of testing execution, assessment and reporting of progress and effectiveness of testing efforts, and development of automated testing.



Chris Adams, CISSP Information Security Architect/Privacy Data Protection Officer

- Chris has more than seven years of IT security work experience including infrastructure/network and multi-platform environments. Additionally, he holds his CISSP certification and is experienced in technical and risk assessment techniques, tools, and practices.
- Chris will be an integral member of the Cerner management team, ensuring that the architecture of the solution supports DHHR's security needs and that security is a primary focus during DDI. He will be the primary point of contact in support of security audits.

#### State Government Strategy Team

In addition to our key personnel team, Cerner's State Government Strategy team, seen below, will offer leadership and vision, clinical expertise, and data science and that will used to guide



this EDS project. Our highly qualified personnel have significant health care industry experience in numerous subject matter areas, ranging from population health to advanced analytics and care management.



Kirsten Hagemann, MBA, MPH Senior Solution Strategist

- Kirsten has over ten years' experience at Cerner, including client-specific design and implementation and troubleshooting communication errors for clinical reporting and laboratory applications.
- In her current role, Kirsten provides regulatory guidance to engineers
  designing public health applications and serves as the Technical Co-Chair on
  the national digital bridge initiative to advance electronic case reporting.



Jodi Briggs, RN, BSN, CCN Clinical Consultant

- Jodi has 20 years' experience in health care related fields, with management experience in ambulatory, long term, and primary care settings.
- Jodi specializes in the development and implementation of innovative health care improvement processes and analysis of Medicaid data to determine corrective action to improve population health.



Debra Jones, MBA, MISM Senior Consultant, Federal Reports

- Debra has 13 years' experience in the healthcare industry with various health plans, managed care organizations (MCOs) and Medicaid systems integrators.
- She has supported enterprise data warehouses and federal reporting on MMIS projects in the states of South Dakota, Louisiana, Colorado, and Montana.



Rhonda Jesse Senior Consultant, T-MSIS

- Rhonda has over 35 years of Medicaid experience primarily as a Business Analyst, which included requirements analysis, functional design, systems design, data conversions, testing and system implementations.
- Rhonda has 7 years experience with T-MSIS providing technical support to State Medicaid Agencies and vendors to better understand their T-MSIS requirements.



Tenike Kuhns
Regulatory Strategist

- Tenike has 18 years' experience in health care, working with and advocating for underserved populations.
- Tenike was the director of the Support Employment Program at United Cerebral Palsy. She also has experience working directly with Missouri and Kansas Medicaid agencies as a Case Manager for home and communitybased services.



Neha Mangu Program Integrity Case Management Lead

- Neha is responsible for managing the implementations of modernized and new Entellitrak systems with extensive experience in the Healthcare and Justice & Law Enforcement fields.
- Neha has worked on eliciting requirements and overall project delivery for multiple projects involving Medicaid, Medicare and Veteran's Benefits applications. Additionally, her experience with litigation-based systems lends to her expertise to build solutions that that ensure suitable protection for federal employees against abuses by agency management.





Jason Helmdollar
Program Integrity Analytics
Lead

- Jason is responsible for driving the development of cutting-edge analysis techniques and investigation skills to be utilized in the Program Integrity Application.
- Jason is a nationally recognized expert on Medicaid fraud and healthcarerelated data analysis, having served as a Special Agent Supervisor with
  Ohio's Medicaid Fraud Control Unit. During his twelve years there, Jason
  investigated and helped prosecute hundreds of criminal fraud cases, was
  instrumental in developing new data analysis strategies, and helped to
  dramatically increase the efficiency and effectiveness of operations.

#### **Data Science Team**

Over the last decade, our clients have steadily increased their demand for advanced analytics, including the ability to identify patterns in forecasting outcomes. To meet this need, we have compiled a highly skilled team of data scientists to manage our analytics application and tools. Our data science team provides value to our clients in several distinct ways, as seen in Figure 4: We embed predictive algorithms and prescriptive analytics, provide end-users with tangible insight, and drive data-driven decision making across organizations.

Data Utilization
Strategy
OHER

Deta Science Team Value

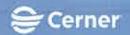
Center
Deta Sciential

Algorithm Deployment

Algorithm Deployment

Actionable Insights

Our data science team provides subject matter expertise during the design, development, implementation, training, and testing of our advanced analytical application and tools. This allows our clients the flexibility to pursue data science projects in-house. These data science algorithms and analytical tools provide significant value to our clients, many of whom require resources that surpass their own capacity. Our data science team offers Data Science as a Service to fill this gap. You will have easy access to data scientists for a variety of analytics needs, including:



- Delivery of statistical analysis and predictive models that are highly tailored to your specific needs. For example, forecasting cost and utilization under Medicaid expansion or the implementation of a novel program or policy changes.
- Strategic guidance on novel data source incorporation into the EDW. These sources may be critical to answering key policy and program related questions.
- Education and support regarding algorithm development and data science best practices for ongoing DHHR analytic projects.

We leverage our data science resources to meet the growing demand for advanced analytics and maximize your data-driven insights. Many Cerner clients have activated Data Science as a Service to meet urgent legislative priorities, allowing our data science team to test hypotheses and forecast outcomes. The results of these tests are synthesized in a short report and delivered within two weeks to meet abbreviated timelines. These reports have provided our clients and their key stakeholders actionable data-driven insights that have helped to shape legislation and policy. Our other existing clients have also leveraged our Data Science as a Service for more extensive projects involving ingesting and integrating disparate data sources.

# Data, Reporting, and Analytic Resources

There are specific staff roles necessary to support West Virginia's Medicaid Enterprise program and policy, data analytics, outcome measurement, and budgeting. Cerner is one of few HIT companies with multi-disciplinary healthcare data and clinical population health knowledge with the experience and skill sets necessary to meet these needs.

We offer a team with deep roots in population health management, and an intense focus on community engagement, to satisfy the following roles:

- Specialists in social determinants of health
- Data experts
- Strategists
- Clinical designers
- Doctors
- Nurses
- Pharmacists
- Engineers
- Mathematicians
- Biostatistician
- Health care policy experts

We will work with DHHR to ensure these roles are available to support the EDS-Specific requirements on a project-specific basis. These professionals not only bring data science expertise but clinical expertise and community engagement experience that we can leverage to support West Virginia EDS Project staffing needs for future DHHR initiatives.

#### Program Integrity

Our team is complemented with the experienced staff of our subcontractor, Tyler Technologies, who provide a broad spectrum of program integrity analytics tools and case management applications. Their expertise lies in monitoring claims for signs of fraud, waste, and abuse to



support investigation, appeals and recovery processes. They will be responsible for covering program integrity requirements, including analytics, and reporting. They will also bring investigative workflow management experience for case intake, decision to investigate, referral to another authority, appeals, recovery, and closure. Their continuous configurability allows for adaptation in response to ever-changing agency, regulatory, and statutory business requirements.

# Project Success Through Collaboration and Flexibility

At Cerner, we constantly seek opportunities to innovate, increase efficiencies, and address issues before they even occur. We accomplish this through tracking project performance via technology and open, transparent communication with you and other West Virginia MES suppliers. By fostering true collaboration and offering the flexibility they need to promote project success, our clients quickly see us as more than just an IT vendor; they see us as a true partner.

Continuous improvement and collaboration are as critical for project staffing as they are for any other area of the West Virginia EDS project. Through regular project status meetings, analysis of status reports, and free and open communication with DHHR, we can respond to project staffing needs as they evolve. We have the flexibility and deep corporate resources with multi-disciplinary teams that Cerner can leverage to meet West Virgina's staffing needs throughout the life of the contract.

Kansas Department of Health and Environment (KDHE) bore witness to our flexibility, and swift response to their staffing needs when they found themselves overwhelmed with their reporting and analytics activities. They turned to us for help, and we now maintain a regular onsite presence with two full-time Cerner analytics consultants working side-by-side with KDHE staff. Based in the state's capital building, our analytics consultants directly support Kansas' report requests and provides the state with data insight. Through our close collaboration with Kansas, we have crossed the threshold from being simply their EDW and analytics vendor, to become a true strategic partner for Kansas. As a result, the state has invited us to become a broader part of their strategic initiatives, and we regularly engage key leaders within the agency in the state's strategy sessions.

The state has also invited Cerner to deliver a joint presentation at the 2019 HIT conference. At this conference, we proposed data analytics and presented alongside the state's Director of Program Finance and Informatics, Division of Health Care Finance, Kansas Department of Health and Environment (KDHE), Adam Proffitt on the "The Power of Big Data Analytics", which addressed the how the Kansas Medicaid program is using data analytics to innovate and increase efficiencies for the state.

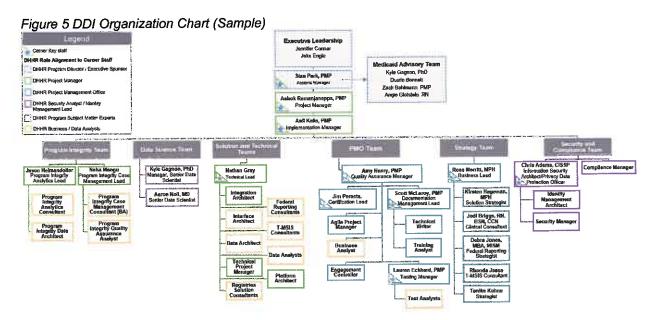
In Montana, though the RFP originally called for limited onsite presence from Cerner staff, we proactively established an onsite presence based on our evaluation of projects staffing needs to facilitate more direct engagement with the Department via regular travel to in-person meetings. We currently work alongside Department staff performing data science work, training as needed, onsite data validation, UAT testing, parallel processing, etc.



# **Organizational Charts**

Our proposed organizational charts illustrate the clear reporting relationships between the project team members. The reporting relationships promote communication and monitoring of performance to provide the highest level of service to DHHR and other stakeholders. Our proposed organization is designed to support easy interaction with key DHHR staff.

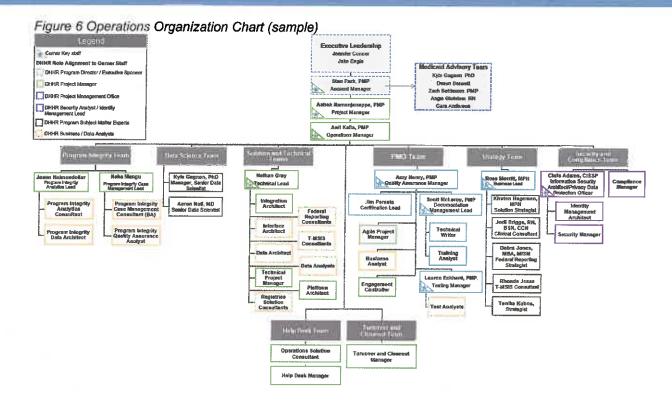
The organization chart below represents the key and additional roles aligned by function and reporting to the Implementation Manager, Anil Kalia, with account oversight by Stan Park. The functions align to the respective State Government leadership team for that function who will be available as a value-added benefit to the team and DHHR stakeholders to enhance the level of talent we bring to this project. The following graphic illustrates our proposed DDI organizational structure.



Our approach to operations phase staffing includes the continuity of support from our corporate executive team that includes State Government Senior Director and General Manager, Jennifer Conner. During operations, Jennifer has overall responsibility for the West Virginia EDS contract and serves as the executive-level liaison between DHHR and Cerner. She maintains ongoing involvement with Cerner executive management to share best practices and bring workable ideas to DHHR. She has full authority on behalf of Cerner to make decisions, solve problems and deploy resources to support compliance with all contract requirements.

We continue to leverage our expert Medicaid Advisory team, much as we did during the DDI phase with more of a focus to meeting the daily DHHR directives and beyond to future program initiatives. The following graphic illustrates our proposed operations organizational structure.





# Resourcing

Our staff is exceptionally qualified to deliver the services required in this RFP. We have designed our proposed organizational structure to ensure that the right individuals and teams are available to carry out all required tasks to optimize quality service and maximize results. We bring together the expertise of our staff, the extensive technical and quality knowledge and experience of our partner staff, and support from a nationally recognized team of Medicaid experts.

Our approach to staff resource estimating, staff ramp-up, and resource loading aligns with the needs of each phase of this contract, positioning our team to fully support DHHR's vision for modernization. Our approach to structuring the organization for each phase is to ensure seamless transition to maximize continuity and communication within the Cerner team and with DHHR. The EDS project team reporting relationships and authority of key personnel determines the logical staffing organization based on the interrelationships of the tasks they perform. The reporting relationships promote clear communication and ease monitoring of performance.

Resource Estimating: When defining a project activity, important considerations are 1) the types of needed resources, 2) the needed quantities of these resources, and 3) the best coordination and scheduling of resources to accomplish work quickly and well. Consideration is also given to availability and the number of hours per day a resource can devote to project tasks. Effective resource planning is essential to assure that the appropriate resources are available to do the work required on activities and to determine if a resource is over-allocated during a particular time period. Ultimately, our Project Manager, Ashok Ramanjanappa, has full oversight on resources assigned to ensure success on each task.



Staff Ramp-Up: In addition to identifying the right resources, it is important to align those resources with the availability of the work. The staff ramp-up takes into consideration the changes in the type and number resources through the different phases of the project.

Resource Loading: Resource loading involves assigning specific resources to task in a manner that assures resources are not overscheduled. Resource loading is important for optimizing use of staff, producing realistic start and finish dates and avoiding peaks and valleys in utilization of staff.

Resource estimating, staff ramp-up and resource loading are important tools for managing our human capital and preventing periods of under- or over-allocation that can jeopardize efficiency and/or effectiveness of our contract performance. A key component of our staffing management approach is to have a contingency plan in place that provides a guidebook for: replacing key personnel as necessary, ramping up with additional personnel as the need arises and an orientation section specific to the EDS project as new personnel are onboarded. Our Agile Development methodology and regular planning sessions have allowed us to flex and adjust staff to meet changing needs and adjust timelines/priorities.

# Staff Screening & Staff Replacements

Cerner assures the competency and eligibility of its employees, agents, and contractors providing Services under this contract. Upon hire at Cerner, all associates have a background check performed using a third-party background check provider. The background check contains the following items:

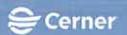
- Criminal Search based on residential history for the past seven years
- SSN Trace
- confirmation of any known FACIS and/or healthcare sanctions, including and OIG/GSA database search.
- US Government Terrorist List as identified by global sanctions and enforcement list

We will maintain staffing levels and continuity consistent with our obligation to perform the Services under this contract. We sync regularly with our recruiting and third-party consulting teams to understand the current and future state of staffing demands. Should a key personnel role become vacant, Cerner's account manager will immediately inform DHHR and will provide ongoing updates about the replacement process. We designed our recruitment approach to ideally fill vacant key staff positions within 30 business days of date of vacancy. In addition, we will ensure that any vacant Categorized Staff position are also filled within forty-five (45) business days. Or within forty-five (45) business days of DHHR's request for new staff. We may also obtain written approval by DHHR for extended vacancies should the need arise.

#### Staffing Descriptions and Diagrams

Cerner proposes an exceptional organization consisting of management and staff with in-depth data analytics and EDW knowledge, recent implementation experience, proven project management skills, technical expertise surrounding the proposed West Virginia EDS project, and an understanding of and passion for meeting DHHR's goals.

Staffing Model – DDI Phase



Cerner commits to maintaining a consistent leadership and staff base throughout the EDS project, starting with the Design, Develop, and Implement (DDI) phase. Our team is dedicated to the long term and everyday needs of DHHR. It is only by working collaboratively as a team and with respective counterparts that we meet the goals of the DHHR. Cerner understand the onsite requirements from the Key Staff table and the mandatory requirements. Additional onsite staff will be provided throughout DDI and M&O based on need. Our intention is to provide onsite, arm in arm partnership with DHHR. The table below represents estimated onsite time. For roles who are required to be onsite the percentage time will adjust to meet the Key Staff table.

Tahla	10	FTFe	for	וחת	Phase
I DUG	1.7	1 (1-9	1OI	()()(	

Project Role (* Key Staff Role)	Ori- Site Time	Project Initiation & Planning	Solution Planning	Solution Design, Testing, & Operations	Solution Deployment	WV-Aligned Role
Account Manager*	50%	1	<b>1</b> "	1	1	Program Director/Executive Sponsor
Project Manager*	100%	1	1	1	1	Project Manager
Business Lead*	100%	;1°	1	1	1	Project Manager
Technical Lead*	100%	1	1	1	1	Project Manager
Implementation Manager*	100%	্ৰ	1	1	195	Project Manager
Certification Lead*	25%	1	1	đ	1	PMO
Documentation Management Lead	100%	1	1	1	1	PMO
Quality Assurance Manager*	100%	1	1	1	1	РМО
Testing Manager	25%	1	1	1	1	РМО
Information Security Architect / Privacy Data Protection Officer	25%	1	1	1	1	Security Analyst/Identity Management Lead
Leadership/Advisors	10%	1	·1	1	i	Program Director/Executive Sponsor
Technical Writer		1	1	1	1	РМО
Agile Project Manager		75	.75	.75	75	Project Manager
Engagement Controller	25%	1	1	1	1	Project Manager
Clinical Strategist	10%	25	.25	25	25	Program SMEs
Solution Architect	25%	2	2	2	2	Business/Data Analysts
HealtheAnalytics Solution Consultants/Report Writer	20%	3	3	3	3	Business/Data Analysts
HealtheRegistries Solution Consultant	20%	1	1	Ĭ.	1	Business/Data Analysts



Data Science Consultants (HealtheDataLab)	20%	1	1	1	1	Program SMEs
Reporting Strategist	20%	1	1	1	1	Program SMEs
Federal Reporting Consultant	20%	2	2	2	2	Business/Data Analysts
T-MSIS Reporting Consultant	20%	1	1	1	1	Business/Data Analysts
Technical Project Manager		.25	.25	.25	.25	Project Manager
Platform / Integration Architect		.5	.5	.5	.5	Project Manager
Interface / Data Architect	20%	3	3	3	3	Business/Data Analysts
Tester	20%	2	2	2	2	Business/Data Analysts
Identity Management (IdM) Architect		.1	.1	.1	.1	Project Manager
Knowledge and Terminology Team		75	.75	.75	.75	Business/Data Analysts
Ancillary Design Team		5	1.5	.5	.5	
Programs and Synapse Team		1	1	1	1	196
Proprietary Code Standardization Team		.5	5	.5	.5	
Software Engineer (T- MSIS)		.5	.5	.5	.5	-
Compliance Manager	20%	∄1	1	1	1	Program Director/Executiv Sponsor
Security Manager	10%	1	1	1	1	Security Analyst/Identity Management Lead
OCM Consultant	25%	1	1	1	1	Project Manager
Program Integrity Lead	50%	.75	.75	.75	.75	Project Manager
Program Integrity Consultant	10%	1	1	1	1	Project Manager
Program Integrity Data Architect	10%	.5	.5	.5	.5	Business/Data Analysts
Program Integrity Software Engineer		.75	.75	.75	.75	Business/Data Analysts
Program Integrity Data Analyst		.75	.75	.75	.75	Business/Data Analysts



Program Integrity Technical Writer		5	5	.5	.5	Business/Data Analysts
Program Integrity Advisors		.5	.5	.5	.5	РМО
PI Case Management Lead	50%	1	1.	1	્ર1	Project Manager
PI Case Management Consultant (BA)	10%	1	1	1	1	Business/Data Analysts
PI Case Management Software Engineer		1.5	1.5	1.5	1.5	25
PI Case Management Quality Assurance Analyst		1	i	1	1	Business/Data Analysts
Pl Case Management Technical Writer		1	.1	.1	1	РМО
PI Case Management Database Administrator		.1	.1	.1	.1	*
Pi Case Management Security Analyst		1.1	1	.1 4	.1	Security Analyst/Identity Management Lead
PI Case Management Advisors		.25	.25	.25	.25	Program Director/Executive Sponsor

# Staffing Model - Operations Phase

During the Maintenance and Operations phase, we will continue to support DHHR with our industry-leading Population Health organization, the State Government leadership team who stays abreast of all the latest CMS and state-specific standards, and the West Virginia EDS team led by Stan Park.

Table 20 FTEs for Maintenance and Operations Phase

			Base	Years			Option	Years	
Project Role (* Key Staff Role)	On- Site Time	¥2	¥3	¥4	Y5	Υ6	<b>Y7</b>	YS	WV-Aligned Role
Account Manager*	50%	1	.5	5	.5	.5	: . <b>5</b>	.5	Program Director/Executive Sponsor
Project Manager*	100%	1	.5	.5	.5	.5	.5	.5	Project Manager
Business Lead*	100%	1 .	5	.5	.5	.5	.5	. <b>.5</b>	Project Manager
Technical Lead*	100%	1	.25	.25	.25	.25	.25	.25	Project Manager
Operations Manager*	100%	1	25	25	25	.25	.25	25	Project Manager
Certification Lead*	25%	1	.25	.25	.25	.25	.25	.25	PMO



Documentation  Management Lead	25%	1	.25	.25	25	.25	25	.25	РМО
Quality Assurance Manager*	100%	1	.5	.5	.5	.5	.5	.5	РМО
Testing Manager	20%	3 <b>1</b>	.5	.5	.5	.5	.5	.5	РМО
Information Security Architect / Privacy Data Protection Officer	20%	1	.5	.5	.5	.5	.5	.5	Security Analyst/Identity Management Lead
Leadership/Advisors	10%	1	.25	.25	.25	.25	<sub>2</sub> 25	25	Program Director/Executiv Sponsor
Technical Writer		1	.25	.25	.25	.25	.25	.25	РМО
Agile Project Manager		.75	.5	.5	.25	.25	.25	<b>25</b>	Project Manager
Engagement Controller	10%	1	.5	.5	.5	.5	.5	.5	Project Manager
Clinical Strategist	10%	25	.1	.1	.1	.1	.1	.1	Program SMEs
Solution Architect	20%	2	2	2	2	2	2	2	Business/Data Analysts
HealtheAnalytics Solution Consultants/Report Writers	10%	3	1	1	1	1	1	1	Business/Data Analysts
HealtheRegistries Solution Consultants		1	.25	.25	.25	.25	.25	.25	Business/Data Analysts
Data Science Consultants (DataLab)	20%	1	5	.5	5	.5	.5	5	Program SMEs
Reporting Strategists		1	.25	.25	.25	.25	.25	.25	Program SMEs
Federal Reporting Consultants	10%	2	.5	.5	.5	5	.5	.5	Business/Data Analysts
TMSIS Reporting Consultants	10%	2	.5	.5	.5	.5	.5	.5	Business/Data Analysts
Technical Project Manager		.25	.1	.1	.1	.1	.1	-1	Project Manager
Platform / Integration Architect		.5	.1	.1	.1	.1	.1	.1	Project Manager
Interface / Data Architects		3	1.5	1.5	1.5	1.5	1.5	1.5	Business/Data Analysts
Testers		2	1	1	.5	.5	.5	.5	Business/Data Analysts
IdM Architect		.1	1	.1	.1	.1	.1	<b>≂</b> 1	Project Manager
Knowledge and Terminology		.75	.1	.1	.1	.1	.1	.1	Business/Data Analysts
Ancillary Design		.5	.1	.1	1	.1	11	.1	



Programs and Synapse		1	.1	.1	.1	.1	.1	.1	3
Proprietary Code Standardization		.5	.1°	:::1	<b>±1</b>	.1	ୀ	.1	-
Software Engineer (TMSIS)		.75	.25	.25	.25	.25	.25	.25	8
Compliance Manager	20%	11	1	1	1	. 1	1	1.	Program Director/Executive Sponsor
Security Manager	20%	1	1	1	1	1	1	1	Security Analyst/Identity Management Lead
OCM Consultant	20%	1_	.75	.5	5	.5	5	5	Project Manager
Operations Solution Consultants		1.5	2	2	2	2	2	2	Business/Data Analysts
Program Integrity Lead	20%	.75	5	5	5	.5	-5	.5	Project Manager
Program Integrity Consultant		.1	.1	.1	.1	.1	.1	.1	Business/Data Analysts
Program Integrity Data Architect		:41	.1	1	<u>a</u> 1	:1	.1		Business/Data Analysts
Program Integrity Software Engineer		.1	.1	.1	.1	.1	.1	.1	
Program Integrity Data Analyst		;;1	:1	:1	1	.1	ୀ	.1	Business/Data Analysts
Program Integrity Technical Writer		.1	.1	.1	.1	.1	.1	.1	РМО
Program Integrity Advisors		.1	.1	.1.	-1	.1	.1	a	Program Director/Executive Sponsor
Pl Case Management Lead	20%	.5	.5	.5	.5	.5	.5	.5	Project Manager
PI Case Management Consultant (BA)		.1 6	đ	.1	3	ă.	3)	.1	Business/Data Analysts
PI Case Management Software Engineer		.1	.1	.1	.1	.1	.1	.1	¥
PI Case Management Quality Assurance Analyst		<b>1</b>	<sub></sub> 1	.1	.1	.1	.1	.1	Business/Data Analysts
PI Case Management Technical Writer		.1	.1	.1	.1	.1	.1	.1	РМО
PI Case Management Database Administrator		1	<b>,1</b> 5	.1	.1	1	-1	1	/ <del>-</del>



Pl Case Management Security Analyst	.1	.1	.1	.1	.1	.1	.1	Security Analyst/Identity Management Lead
PI Case Management Advisors	.1	.1	.1	_1	.1	.1	.1	Program Director/Executive Sponsor

For additional staffing details, please refer to the *Draft Initial Staffing Plan* document located in Attachment L: Additional Attachments located in the technical proposal.

#### Subcontractor Staff

Cerner will not be using subcontractor staff for any of our proposed key positions. However, we have included the firms Tyler Industries and i2i Population Health as part of our proposed offering. Tyler Industries is providing the Program Integrity application of the proposed offering while i2i Population Health is providing ETL and the functionality for comments on reports. These subcontractors will be managed by our project manager in coordination with the account executive.

# 2. Use of State Staff

Describe the required staffing of business and technical resources DHHR should provide to support the creation of all deliverables. Specifically, the Vendor should address the following:

- The nature and extent of Department support required, in terms of staff roles and percentage of time available
- Assistance from Department staff and the experience and qualification levels of required staffing
  - for both implementation and maintenance and operations phases

DHHR may not be able or willing to provide the additional support the Vendor līsts in this part of its Proposal. The Vendor therefore should indicate whether its request for additional support is a requirement for its performance. If any part of the list is a requirement, the State may reject the Vendor's proposal, if DHHR is unwilling or unable to meet the requirements.

Based on our market experience implementing EDW and analytics projects in Montana and Kansas, we believe the Department will need to provide the subject matter expertise indicated below. The hours needed or specific roles could vary, however strong project management/leadership, an effective PMO, and expertise of existing data/systems are critical to a successful implementation.

We recognize the importance of ensuring minimal disruptions and accounting for increased workloads on DHHR resources. We use lessons learned, and are open to other suggestions, as to how to lessen the impact on DHHR staff. Our approach is:

- Cerner's strategy is to use our internal quality standards in addition to peer reviews designed to achieve a "once and done" approach for DHHR approval, thus reducing repetitive DHHR review
- Detailed focus and strenuous Requirements Traceability and validation to confirm requirements early in the project with a focus on understanding for testing and certification



- Continuous collaboration with DHHR regarding resource requirements, time commitments and level of effort;
- Using email communication, with relevant personnel, as opposed to formal meetings where appropriate;
- Expediting decisions by providing concise goals and options available; and
- Use effective meeting management techniques.

Based on our experience from the previous projects, we formulated estimates of DHHR time commitments in the table below, including duration and full time equivalent (FTE). We provide estimates of time requirements for DHHR resourcing and overall staff. We also included our basis of estimates (Purpose) to further assist DHHR in the evaluation of the staffing needs.

Table 21 DHHR EDS Project Time Estimates, FTEs by Project Phase

			Base Years				Option Ye	OFS.	
		lėje.	III O&M	O&M	08M	08.0	OSM	O&M	DAM
DHHR Role	Purpose	1Yt	Y2	Y3	Ya	Y5	Y6	¥7	Y8
Project Manager	Collaborates with the Cemer project manager to coordinate the implementation program, including the project plan, event and meeting scheduling, resource management, task execution, controls, and risk mitigation.	.1	1	.5.	.5	.5	.5	.5	.5
Program Director/ Executive Sponsor	Provides vision, oversight, and support to ensure the success of the clinically driven, value-oriented implementation process. Supports decision-making efforts. Manages escalations or issues. Provides governance and guidance to key work streams.	.25	.25	.1	.1	.1	.1	.1	.1
PMO	Supports deliverable development. Helps align Cerner and	2	2	1.5	1.5	1.5	1.5	1.5	1.5



	industry best practice with DHHR requirements.								
Business/ Data Analyst	Supports the build/configuration of application(s) with venue and workflow knowledge for specific functional areas. Helps facilitate training to identified groups and supports quality control/assurance on application activities.	3	3	2	2	2	2	2	2
Program SME	Supports Cerner solution consultants as SMEs for design, specifications documentation and the general oversight of reports as it relates to specific programs.	1	1	.5	.5	.5	.5	.5	.5
Security Analyst/ Identity Manage- ment Lead	Integrates identity management systems with Cerner's solutions. Designs plan for security processes by identifying, building, and maintaining users, roles, and groups.	.25	.25	Э	.1	.1	.1	.1	.1
IV & V	Provides independent oversight of the project and guidance on certification.		:5	-	-	22			-

<sup>\*</sup>FTE estimate based upon past project experience and staffing expectations. DHHR will establish the expectation for IV&V roles.

## 3. KEY STAFF, RESUMES, AND REFERENCES

Key staff consist of the project's senior leadership for the EDS project. These resources are responsible for providing leadership, and creating the standards and processes required for the successful implementation, operation, and maintenance. Resumes for key staff named in the Vendor proposal should indicate the role of the staff on the EDS project and demonstrate how



each staff member's experience and education will contribute to the successful implementation of the EDS. The Vendor should make the proposed key staff available for an in-person interview upon DHHR's request.

To ensure successful transition to the operations phase, the implementation activities should be led by key staff identified in the list below:

- Account Manager
- Project Manager
- Business Lead
- Technical Lead
- Implementation Manager
- Operations Manager
- Certification Lead
- Quality Assurance Manager (added per Addendum #4)

The qualifications, experience, and responsibilities for each key staff role are defined in *Appendix* 3: Staff Qualifications, Experience, and Responsibilities.

#### 3.1 Resumes

The Vendor should complete Table 16 and embed resumes of all proposed key staff to this section of the proposal. Each resume should demonstrate experience relevant to the position proposed. If applicable, resumes should include work on projects cited under the Vendor's corporate experience, and the specific functions performed on such projects.

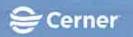
With Cerner, DHHR can be confident that it has an engaged and knowledgeable partner in the modular Medicaid market. We have our people locked and engaged in everything Medicaid-related to keep our clients aware and on the path to success. We are excited to present the core of our team that will be working daily with the state to help DHHR realize the well thought out goals of the project. Our approach to assembling the team was to look internally and externally to comb for the ideal talent and experience for optimal project success.

Our proposed key and lead personnel will manage and perform the functions for this project, leveraging the tools recommended by the State Government team and backed by a dynamic team with hundreds of years of collective experience across the diverse set of knowledge and skills needed to meet the breadth and depth of activities and tasks outlined in the RFP.

In the following table we include an overview of the proposed key staff followed by their individual resumes.

Table 16: Resumes for Proposed Key Staff (RFP Table 16)

Proposed Staff	Experience in Proposed Role
Account Manager Stan Park, PMP	Stan brings over 20 years of experience in IT, business development, contract management, and program management. He provides contractual oversight, including SLA reporting and support operations. Stan currently oversees all contractual relations for Cerner's Kansas and Montana MMIS projects. Stan will provide the Department a direct line of contact with Cerner executive leadership and will work to ensure DHHR's overall satisfaction.
Project Manager Ashok	Ashok is a Project Management Professional-certified individual that has been working with State Medicaid agencies for the past 13 years. He has been the



Ramanjanappa, PMP	project lead for several information systems projects over the past 17 years. He is a highly accomplished, energetic, trusted, detail-oriented, decisive senior executive and strategic solutions provider with outstanding program management and conflict management skills. Hand-picked by executive team to turn around underperforming programs; Applications driver who bridges the gap between business and technology with expertise in managing complex programs and multiple concurrent projects. Adept at managing all phases of project life cycle, from needs assessment through implementation and operations. He holds a Bachelor of Engineering and is presently working on his MBA.
Business Lead Ross Merritt, MPH	Ross has over 15 years of experience in population health and healthcare data management, including more than 5 years of experience working directly with the MT, KS, and NV State Medicaid agencies. Both KS and MT cover greater than 500,000 member lives. Before joining Cerner, Ross was lead analyst at both DXC Technology and Truven Health Analytics. In his role as a Senior Analytics Consultant, Ross oversaw the development of reports from ideation to delivery, coordinating among strategists, data analysts, and integration architects to provide insights into population health, quality of care, and cost effectiveness. Ross is versed in Cerner's Medicaid Management Methodology, which is based on guidance from PMBOK®. He holds a Master of Public Health degree with an emphasis in Public Policy from the Missouri State University and a Bachelor of Arts degree with an emphasis in American Cultural History from Arizona State University.
Technical Lead Nathan Gray	Nathan brings to DHHR 15 years of experience in engineering, project management, implementation, and strategy. In his current role, Nathan leads Cerner's business development and strategic approach for several analytic applications, including out-of-the-box and custom analytics. Nathan has led design, implementation, validation, and training activities for the HealtheIntent Platform. He has successfully delivered the state of Montana's Release 2, including nearly 200 data sources and dozens of reports and models. In Kansas, he also led design for Kansas Medicaid's Release 2.
Implementation Manager Anil Kalia, PMP	Anil is a Certified Project Manager with over 15 years expertise in managing projects with excellent management, communication and organization skills across various functional areas. Anil leverages project management expertise and PMP Certification to lead the technical / business management of multiple concurrent projects in a multi-platform environment using onsite and off-shore resources. He has a track record of successfully conducting Joint Requirement Planning (JRP), Joint Application Design (JAD) sessions and design reviews including Entity Relation Diagram (ERD), module reviews, and technical reviews with users and technical team.
	Note: Per DHHR's guidance in response to Vendor question numbered 185 issued with Addendum #4, we are proposing Anil to fill the position of Implementation Manager during the DDI phase. He will transition to the Operations Manager role for the M&O phase of the contract.
Operations Manager Anil Kalia, PMP	Anil is a Certified Project Manager with over 15 years expertise in managing projects with excellent management, communication and organization skills across various functional areas. Anil leverages project management expertise and PMP Certification to lead the technical / business management of multiple concurrent projects in a multi-platform environment using onsite and off-shore resources. He has a track record of successfully conducting Joint Requirement Planning (JRP), Joint Application Design (JAD) sessions and design reviews



	including Entity Relation Diagram (ERD), module reviews, and technical reviews with users and technical team.
	Note: Per DHHR's guidance in response to Vendor question numbered 185 issued with Addendum #4, we are proposing Anil to fill the position of Implementation Manager during the DDI phase. He will transition to the Operations Manager role for the M&O phase of the contract.
Certification Lead Jim Peresta	Mr. Peresta has more than 30 years' experience working in planning, design, development, implementation, and operations management of MMIS systems in 14 states. He served as MMIS Program Manager in the state of Vermont and participated in Vermont's R3 Certification Final Milestone Review of their Pharmacy Benefit Management (PBM) module and obtained approval of CMS Certification in Q1 2018. He has a thorough understanding of MITA 3.0 Business Processes, CMS MECT v2.3 Certification Requirements (MMIS, MEET and 5 Common CMS Checklists), and CMS' MECL. He has established close relationships with CMS Central Office and Regional Office leadership staff.
	Mr. Peresta will ensure that system functionality and business operations fulfill the Medicaid certification checklist criteria, evidence and artifacts requirements, and any other information required to achieve CMS certification. He will develop and implement a strategy and plan for proper documentation of system artifacts to support the certification process and will provide oversight of the certification process. Additionally, he will serve as the primary contact for the State with its engagement and interaction with IV&V, CMS, and any other state-authorized group or individual for certification efforts.
Documentation Management Lead Scott McLeroy, PMP	As Manager and Senior Engagement Owner in Cerner Foundations Organization, Scott focuses on Project Management Office oversight, contractual compliance, quality assurance and engagement owner development. Scott joined Cerner in 2014 as an engagement leader and has over 25 years of client-centered relationship and project management experience with expertise in leading top performing teams from RFP through completion. Prior to joining Cerner, Scott held health care consulting roles focused on project management, M&A transaction advisory, and strategy consulting at RSM. Scott is a graduate of the University of Kansas and has a Bachelor of Science in Aerospace Engineering. He holds a Project Management Professional (PMP) certification from the Project Management Institute and is a Six Sigma Continuous Improvement Yellow Belt.
Quality Assurance Manager Amy Henry, PMP	As PMO Lead, Amy manages and oversees all PMO processes, including training, testing, documentation, and certification workstreams. Amy has over 16 years' experience in software development, testing, quality assurance processes, and portfolio management. Amy provided overall project management support, executive implementation oversight and coordination of all IP application areas for Cerner's recent United Kingdom's National Health Services (NHS) project. She was responsible for managing all software development for British Telecom and managed releases to London Programmer and the UK's escalations to Cerner's support and IP engineering teams.
Testing Manager Lauren Eckhard, MPA, PMP	Lauren has an MPA in Health Care Administration from the University of Missouri – Kansas City Bloch School of Business. As Testing Lead, Lauren oversees all project testing activities, performs quality control on test scripts and evidence, maintains a detailed view of testing status, and produces test results and other documentation as needed. She was instrumental in tailoring the requirements traceability tool and processes Cerner uses for Medicaid projects.



	Lauren has over ten years' experience in the health care and social services fields. She excels in collaborating with technical experts to develop policies and procedures and to ensure adherence of work products to defined standards.
Information Security Architect / Privacy Data Protection Officer Chris Adams, CISSP	Mr. Adams has more than seven (7) years of IT security work experience including infrastructure/network and multi-platform environments. Additionally, he holds his CISSP certification and is experienced in technical and risk assessment techniques, tools, and practices. He is familiar, through his work on various federal IT projects, with federal security and privacy requirements and their application in IT projects, during both the implementation and the maintenance and operations phases. He has designed and implemented security programs for large-scale IT systems that ensure the security and privacy of the information they contain.



## Stan Park Account Manager

#### **Professional Summary**

Brings 20 years of executive experience in all phases of business development, capture management, program management, and account management. More than a decade in the Health IT services industry for public sector organizations. Specific certifications in Health IT include Certified Professional in Healthcare Information and Management Systems (CPHIMS) and HIT Pro Implementation Manager.

Has held a wide range of positions on mission-critical IT projects that have high visibility within the government and aggressive project schedules. Expertise includes the disciplines of structured systems development and deployment specific to an enterprise data warehouse as well as the application of performance management programs to achieve customer requirements. Related qualifications include project management, subcontractor management, contract management, requirement analysis, schedule, cost, and quality management.

## Relevant Experience

### Client Accountable Executive

Cemer Corporation, New Orleans, LA, June 2015-Present

- Serves as primary executive support for State and Public Population Health team during bid, negotiations, and implementation for the modularized Medicaid Management Information System (MMIS) for the State of Montana and the State of Kansas.
- Serves as client accountable executive (CAE), responsible for ensuring that all contract terms and conditions, service levels and other performance requirements are met and reported to the client.
- Communicates directly with State of Kansas team in tracking status and performance for the enterprise data warehouse solution, HealtheEDW.
- Works closely with the project management team to ensure that any issues are promptly escalated and managed to mitigate downstream risks.

#### Managing Director

Out of the Park Consulting, Inc. New Orleans, LA, October 2013 - December 2016

- Served as Network Director for Louisiana Ambulance Alliance oversaw contract management
  activities for the Electronic Rural Health Information Technology (E-RHIT) Network in partnership
  with the State of Louisiana Emergency Response Network (LERN), the Louisiana Healthcare
  Quality Forum (Quality Forum), and the State of Louisiana Traffic Records Coordinating Committee.
- Managed all contractual relationships and service level agreements throughout the implementation
  of a pre-hospital Electronic Patient Care Record that was integrated into the electronic patient
  systems used by critical access hospitals, federally qualified health centers, and physician
  practices.

## Client Services Executive

Louisiana Health Information Exchange (LaHIE), New Orleans, LA, February 2014-December 2014

- Increased awareness and enthusiasm for LaHIE by explaining the benefits of participation as a data provider and/or user to health care providers.
- Delivered on implementation requirements for success from a PM perspective.
- Solution provided uses Orion Health HIE with a proven, high-performing interoperability platform built for healthcare with HL7® FHIR® capabilities for robust and reliable acquisition and exchange of health data



#### Vice President

AAC Inc. New Orleans, LA, March 2003 - June 2013

- Provided overall technical, operating, marketing/customer relations, and resource direction to
  ensure the successful capture and performance of contractual commitments in New Orleans, LA,
  Pascagoula, MS; and Millington, TN., Successfully won and managed 6 separate tasks in 3
  geographically disparate locations.
- Served as project manager for Veterans Affairs VETSNET system and Navy Medical Readiness Reporting System (MRRS). VETSNET tracked benefits for Military Veterans and MRRS tracked immunizations for active and reserve military.
- Responsible for profit and loss (P&L) and for the integration of activities and strategies with corporate and organizational goals and objectives. Influences policy and/or major accounts.

#### **Director Business Development**

Affiliated Computer Services (now Lockheed Martin), New Orleans, LA, November 2002–March 2003

- Provided technical expertise and support to qualify the opportunity, scope needs and potential solutions. Effective communication skills were utilized to ensure customer satisfaction.
- Developed and made business case presentations, program development reviews and recommendations to Executive Management for the purpose of securing bid/no bid decisions.

#### Global Program Manager

SignalSoft Corporation (now Openwave), Boulder, CO, May 1999 - May 2002

Served as Global Enterprise Program Manager to the Siemens and Compaq Business Partner channels, responsible for enabling these channel partners to successfully resell and deliver SignalSoft products globally through a Partner Support Strategy to identify and marshal the necessary resources to train and support these channel partners while deploying location-based platforms to numerous wireless carriers in the North America, EMEA and Asia-Pacific markets.

## Group Manager – Gulf Coast Operations

Affiliated Computer Services, Inc (ACS - Formerly CDSI), New Orleans, LA, March 1993- March 1999

Served as regional director responsible for developing, growing, and managing 10 Government and Commercial contracts. Oversee \$8M and 100 personnel with 15% annual growth. Clients include Department of Interior – Minerals Management Service, Army Corps of Engineers, U.S. Navy, USDA National Finance Center, State of Louisiana, and Shell Oil. Tasks managed utilized: database development, software development, documentation support, process management, quality assurance and configuration management.

#### Education

- Master of Science, Geographic and Cartographic Sciences, George Mason University, 1990.
- Bachelor of Science Geography/Cartography, Missouri State University, 1987.

- HIT PRO Implementation Manager, June 2012.
- Certified Professional in Healthcare Information and Management Systems (CPHIMS), June 2013.
- HIPAA Privacy and Security for Business Associates, August 2014.
- Professional Scrum Master (PSM), December 2014.
- Project Management Professional (PMI Certified), February 2000, September 2006, Expiration:
   September 2022



## Ashok Ramanjanappa Project Manager

## **Professional Summary**

Project Management Professional with 13 years of State Medicaid experience and 17 years of project lead experience. Highly accomplished, energetic, trusted, detail-oriented, decisive senior executive and strategic solutions provider with outstanding program management and conflict management skills. Handpicked by executive team to turn around underperforming programs; Solutions driver who bridges the gap between business and technology with expertise in managing complex programs and multiple concurrent projects. Adept at managing all phases of project life cycle, from needs assessment through implementation and operations.

#### Relevant Experience

#### Lead Engagement Owner

Cerner Corporation, Kansas City, Missouri, July 2019 to Present

- Oversee the Operations & Maintenance of Datawarehouse & Analytics Solution for the State of Montana
- Oversee the operations team in order to resolve all the service requests as per the SLAs
- Identify, resolve and mitigate risks, issues and discrepancies in day to day EDW operations

#### Vice President, Delivery

Client Network Solutions LLC, Lansing, Michigan, January 2017 - March 2019

- Thirteen years of progressive experience overseeing and managing implementation of largescale intricate Medicaid Management Information Services (MMIS) transformational programs for the State of Michigan, the State of Illinois and the State of Utah
- Managed Client Relationship and organic growth of the State accounts
- Participate in Gate Reviews and pricing of new Medicaid RFPs
- Successfully implemented nation's first Medicaid on the Cloud for the State of Michigan on Jan 2018 which comprised of PaaS, laaS and SaaS solution

#### Senior Program Director, Delivery

Client Network Solutions LLC, Lansing, Michigan, January 2015 to December 2016

- Was chosen by the Senior Executive team to manage and oversee the State of Utah project when the project has missed the deadlines multiple times. Turned around the project by successfully implementing the Provider module in Jul 2016
- Convinced the State of Utah Management to adopt a Cloud MMIS implementation via cost benefit analysis
- Successfully implemented the Provider Module on the cloud for the State of Michigan and State of Illinois on Jul 2015 using laaS, PaaS and SaaS solution
- Ensured completion of all programs and projects within the agreed upon timeframe and budget
- Support the State of IL and IV&V staff in Provider module certification

#### Program Director, Delivery

Client Network Solutions LLC, Lansing, Michigan, January 2012- December 2014

- Worked with the State of Michigan, State of Illinois, CMS and other CNSI executives to establish a first of a kind, cloud based MMIS program.
- Implemented electronic Medicaid Incentive Program Payment on the cloud for the State of Illinois
- Established a process for Gap-Analysis and Solution development process to help the implementation of Provider cloud module
- Worked with the State of Michigan, State of Illinois, IV&V and PCO to establish a detailed integrated schedule for the provide implementation.



- Provide the status of gaps, design/solution and system /integration testing to the IV&V team
- Explain the gaps, gap traceability matrix, design and system testing, implementation, conversion and development processes to the IV&V team
- Worked with the State & IV&V team on the Milestone reviews needed for CMS Certification
- Developed a master program plan using and managing master project plans using MS project

#### Program Manager

Client Network Solutions LLC, Lansing, Michigan, January 2010 to December 2011

- Managed successful Implementation of 4010 to 5010 and ICD-9 to ICD-10 migration project
- Identified and managed the program risks and issues pro-actively on a periodic and as needed basis
- Supported the State of Michigan team in MMIS Certification
- Managed and maintained the project schedule
- Ensured all the project deliverables were created on time with good quality as per the schedule
- Managed the client and client expectations
- Triaged and resolved the post operations defects and/or enhancements identified by the clients

#### **Functional Manager**

Client Network Solutions LLC - Lansing, Michigan, November 20015- December 2009

- Managed and guided a team of Senior Business Analyst / Functional Leads and subject matter experts to successfully implement a MMIS for the State of Michigan.
- Facilitated Requirements Validation / Elicitation sessions to finalize and baseline the requirements Facilitated Design sessions to finalize and baseline the functional design
- Resolve the risks, issues and discrepancies raised by the clients, functional team and subject matter experts on a day to day basis
- Guide the test team in developing a test plan and test strategy to test the MMIS
- Lead and oversaw system testing, parallel testing, load and performance testing of the MMIS system
- Provide the Status of Requirements, Design and System testing to the IV&V team
- Co-ordinate with the IV&V team to resolve any findings reported by them on the project deliverables
- Worked with the State & IV&V team to develop a certification plan and timeline
- Support the State during User Acceptance testing by helping the end users understand the system and triaging the defects uncovered during UAT

#### Project Management Consultant

General Motors, Detroit, Michigan, January 2004- October 2005

#### Senior Software Engineer

Larsen & Toubro Limited, India, October 1998 – December 2003

#### Education

- Bachelor of Engineering, Bangalore University, India, October 1994 to September 1998
- Executive MBA, Smartly Institute, current- expected graduation May 2020

- Project Management Professional (PMP), June 2006, Expiration: June 2022
- Certified SCRUM Master, April 2006
- ITIL® Foundation Course, April 2007.
- Six Sigma Black Belt (certification has expired), June 2006 to June 2009



## Ross Merritt, MPH Business Lead

## **Professional Summary**

Over 15 years of experience in population health and healthcare data management, including more than 5 years of experience working directly with the MT, KS, and NV State Medicaid agencies. Both KS and MT cover greater than 500,000 member lives. Before joining Cerner, Ross was lead analyst at both DXC Technology and Truven Health Analytics. In his role as a Senior Analytics Consultant, Ross oversaw the development of reports from ideation to delivery, coordinating among strategists, data analysts, and integration architects to provide insights into population health, quality of care, and cost effectiveness. Ross is versed in Cerner's Medicaid Management Methodology, which is based on guidance from PMBOK®.

#### Relevant Experience

Sr. Analytics Consultant, Team Lead Cerner Corporation, Kansas City, MO, July 2018 - Present

Consult with clients to develop and execute analytics strategies that address client-specific business challenges. Including complex data acquisition, data integration and analysis projects across financial, clinical, and operational venues, with an emphasis on clients' Medicaid Management Information Systems (MMIS). Lead the design and build of advanced data management solutions that provide data acquisition, data quality, data transformation, master data management, and integration of data from disparate sources.

Sr. Analytics Consultant DXC Technology (formerly HPE), McLean, VA, Nov 2013 - May 2015, June 2016 - June 2018

Served as team lead subject matter expert on chronic disease epidemiology, healthcare claims analytics, data visualization, health disparities, and population health indicators for a Medical Management team, serving clients such as NV State Medicaid agency. Designed, built, and presented reports and studies supporting States' efforts to implement healthcare reforms to improve the value of Medicaid services and health outcomes.

- Authored the analytics-related components of RFPs and product development efforts.
- Consulted with state Medicaid leaders on reports and studies of interests, including developing the scope of projects and defining and writing technical and functional requirements.
- Lead quarterly meetings of a state Medicaid clinical steering committee, presented custom
  analyses on urgent topics to clients such as emergency room super-users, Medicaid expansion
  members to traditional members comparison, and the burden of diabetes on Medicaid programs.
- Gathered, reviewed, and interpreted CMS and local legislation and guidance regarding analytics and interpreted those using analytic solutions

Director of Analytic Solutions

Netsmart Technologies, Overland Park, KS, June 2015 - June 2016

Drove execution, development, and delivery of benchmarking services for Netsmart clients across the Health and Human Services industry.

- Developed newsletters for client base to share product usage tips and best practices
- Made on-site visits to clients for intensive product training and solution customization
- Jointly developed new clinical content and kept solution components updated with medical directors
- Worked with clients to develop presentations for board meetings based on Netsmart benchmarking reports



Population Health Strategist

Cerner Corporation, Kansas City, MO, Sept 2012 - Nov 2013

Served as the strategist for developing the ad hoc reporting component of Cerner's new population health solution. Collaborate with subject matter experts working on various solution designs to ensure a cohesive, intuitive and efficient analytical presentation layer. Collaborate with engineering to ensure a scalable infrastructure. Responsible for leveraging the data, analytics and business intelligence to aid other associates leading solution design for population health solutions.

- Worked as part of the solutions design team to design prepackaged and ad-hoc analytics capabilities at provider, organization and population level.
- Worked across internal organizations to prioritize functionality requests and develop requirements and solutions based upon scope of capabilities

#### Sr. Analytic Consultant

Truven Health Analytics (now IBM Watson), Topeka, KS, Dec 2010 - Sept 2012

Organized the project team, work with project team to define production steps, define testing plans, and prepare a project work schedule; track and communicate status to project leadership. Provide on-site and/or telephone support and training to end users.

- Designed and executed return-on-investment (ROI) studies on disease management programs
- Designed and executed a study to determine if network discounts were applied according to contract language, which allowed the client to assess a \$1 million penalty to a large insurer.

#### Analytic Consultant

Truven Health Analytics (now IBM Watson), Topeka, KS, Sept 2008 - Dec 2010

Lead analyst for our Medicaid and Employer client in the state of Kansas, for which there was a large database combining Medicaid data, Employer data, and private insurer data.

- Designed and executed multiple comparative studies between Medicaid's fee-for-service population and their managed care population, which assisted legislators in decision to transform the Medicaid program into a managed-care model entirely.
- Analyzed and made recommendations to senior leadership regarding the racial and ethnic disparities in health care outcomes and Medicaid enrollment.

Health Research Analyst, *Arizona State University (Tempe, AZ) January 2008* – September 2008 Lead Chronic Disease Epidemiologist, *Arizona Dept. of Health Services (Phoenix, AZ) January 2006* – *January 2008* 

Data Manager, Arizona Dept. of Health Services (Phoenix, AZ) September 2004 – March 2006 Board Member & Section Chair, Arizona Public Health Association, September 2005 – December 2007

#### Education

- Master of Public Health, emphasis in Public Policy, Missouri State University, December 2004
- Bachelor of Arts, History, emphasis in American Cultural History, Arizona State University, August 1999

- Public Health Epidemiology Certificate, Partnership between the Arizona Department of Health Services & Arizona State University, April 2007
- Accelerated Leadership Development Certificate, Partnership between the Arizona Department of Health Services & Arizona State University, August 2005



## Nathan Gray Technical Manager

#### **Professional Summary**

Over 15 years of experience in healthcare technology including engineering, project management, implementation, and strategy expertise. In his current role, Nathan leads Cerner's business development and strategic approach for several analytic solutions, including out-of-the-box and custom analytics. Nathan is overseeing the HealtheIntent implementation for our Medicaid clients including the State of Montana, Department of Public Health and Human Services (DPHHS) where he leads the design, implementation, validation, and training activities. He manages the activities of the team implementing the State's phased implementation including nearly 200 data sources and dozens of reports and models. He has also led the work for the State of Kansas, Department of Health and Environment (KDHE) to install the State's Enterprise Data Warehouse (EDW).

Nathan began his career at Cerner as a software engineer, first on the Cerner Registration Team and then the Cerner Healthe Regional Directories Team. He was promoted to team leader of the United Kingdom Program Reporting Team in 2006, where he led a nine-member engineering team to develop applications to facilitate clinicians' workflows and governmental reporting needs. Upon returning to the US in 2008, Nathan joined the Research Group first as a Program Manager and Strategist. Nathan is adept at defining technical approaches, implementation methodologies and is a recognized as expert in analytics and research technology solutions and has extensive experience collaborating and presenting with clients and industry groups such as HIMSS, IHE, DIA, ISPOR and CHC. and support processes to ensure our clients obtain the most value from analytics.

#### Relevant Experience

Lead Technology Architect, State Government Analytics Cerner Corporation, June 2018 - Present

- Leads the State Government Analytics team of data analysts serving Medicaid market
- Manages and oversees all analytics content including design, implementation, and support for the Medicaid market
- Collaborates with IP to develop new functionality to support the state government market

## Sr. Strategist, Analytics

Cemer Corporation, December 2013-June 2018

- Managed implementation and piloting of new technologies with aligned clients including APP, IUH, Emerus and MU
- Developed sales messaging, competitive intelligence and trained sales team which resulted in client growth from 10 to 160 clients
- Defined development priorities and collaborated with engineering to deliver

## Advisory Solution Consultant, Research Solutions Cemer Corporation, September 2011-December 2013

- Leader of the business strategy including business models, marketing, pricing, future development, and competitor intelligence
- Led a yearlong process to improve sales which resulted in 200% growth in 2013
- Developed collaborative solution offerings with: Scheduling, Billing, Catalyst, Lighthouse, FSI, Oncology, Patient Portal, Smart Registries, Healthe Intent, Millennium Plus, Ambulatory EMR, Healthe Athlete, Cerner Math, CernerWorks, DeviceWorks, Helix, Document Imaging
- Developed multiple markets: pharmaceutical, premier, HNA, government and international



- Responsible for developing nine solutions
- Graduated from the Population Health Leadership Development Program, multiple NOTT awards
- Recognized as an industry expert and presented at industry trade shows such as DIA and CHC

## Strategist, Research Solutions

Cerner Corporation, January 2009-September 2011

- Managed vision, prioritization, and delivery of the research solutions
- Made key strategic decisions to develop features which resulted in immediate sales growth of over 100%
- Established new research solution markets with pharmaceutical companies including key relationships with Quintiles, Icon, Registrat-Mapi and PharmaNet.
- Provided leadership to deliver solutions to meet much greater than expected demand.
- Recognized as an industry leader via collaboration on industry standards such as the IHE RFD standard

### Project Leader, Research Solutions Cerner Corporation, January 2008-January 2009

- Managed eight-member engineering team
- · Responsible for strategy and defining team vision
- · Responsible for client implementation project management
- Led and developed solution training content for clients, consulting groups and Cerner associates.

## Team Lead, Program Reporting Team (UK) Cerner Corporation, April 2006-January 2008

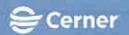
- Managed nine-member engineering team
- Architected reporting solution based on application, data base and build knowledge of PathNet, Scheduling, FSI, Discern, Person Management, PowerChart, SurgiNet, EMPI, HIM, HNA foundational tools, i18n tools, OPS, Preferences and Security
- Ensured reports resulted in client satisfaction by directly working with Fujitsu, BT, Connecting for Health, and various individual UK clients

## Software Engineer, Program Reporting Team (UK) Cerner Corporation, January 2006-April 2006

- Authored technical design and requirement documents which greatly improved team productivity
- Taught CCL and other engineering skills to all six new engineers
- Software Engineer, Health Information Exchange (Healthe)
- Cerner Corporation, March 2005-January 2006
- Authored technical designs to produce a brand-new solution with components based on new schema, Java, C++ and DB scripting
- Software Engineer, EMPI, PM, Reg, and HIM
- Cerner Corporation, March 2004- March 2005
- Performed extensive work with data base scripting, C++ servers, VB, VBA, multithreaded programming and window's services for optimal functionality and performance
- Resolved over 50 outstanding set up or code issues for clients

#### Education

Bachelor of Science in Computer Engineering, University of Michigan, 2003



#### Anil Kalia

Implementation Manager

#### **Professional Summary**

Certified Project Manager with over 15 years expertise in managing projects with excellent management, communication, and organizational skills across various functional areas. Leverages project management expertise and PMP Certification to lead the technical / business management of multiple concurrent projects in a multi-platform environment using onsite and off-shore resources. Has conducted Joint Requirement Planning (JRP), Joint Application Design (JAD) sessions and design reviews including Entity Relation Diagram (ERD), module reviews, and technical reviews with users and technical team.

#### Relevant Experience

Senior Engagement Owner – Kansas Department of Health, Topeka, KS Cerner Corporation, Kansas City, Missouri, July 2018 – Present

- Manage complex client projects in highly-variable environments to achieve targeted outcomes
- Promote client value via identification of baseline metrics, key performance indicator (KPI) management, and resulting value objectives
- Act as an escalation point for client and project risks
- Ensure timely delivery of implementation project deliverables
- Coordinate implementation activities with prime contractor
- Respond to requests for information or resolution of comments from the IV&V contractor
- Provide timely project status updates to stakeholders; communicate project information to project team
- Support execution of cross-functional collaboration with internal and external stakeholders to
  execute client and methodology vision, objectives, and strategy driven by executive leadership
- Design, build, and maintain complex project plans based on contractual commitments

## Project Manager: ITSD – Department of Social Services Missouri Office of Administration, January 2011 – June 2018

Department of Mental health (DMH) 1115 application waiver project (Implement DMH waiver program into Missouri Family Assistance Management Information system (FAMIS))

 Worked with team to create project framework recommended by PMI in SharePoint and use JIRA system.

Geographical Interface System – Provider Search Project

- Lead project to create MAP search utility in the internet environment to enable Medicaid recipients to easily identify providers based on provider type and specified proximity.
- Coordinated across 10 functional groups including ITSD, Business, and GIS teams.
- Ensured delivery of action items from over 20 non-direct report colleagues. Ensured timely completion of projects within defined scope.
- Provided strategic advice and insight to management regarding project status.

Geographical Interface System - MRT Search Project

Led successful creation and implementation of MAP search utility for MRT providers within one
month. The intranet application is primarily used by Eligibility Specialists in the Department of
Social Services.

Electronic Disqualified Recipient System (eDRS) Project

Synced data between the State of Missouri and Federal eDRS systems, which required updates
to the eDRS system in response to changes in sanction disqualification. Success of this project
resulted in creation of the FAMIS system in real-time, and opportunity to sign MOU with four other
states.

Missouri Family Assistance Management Information System (FAMIS) Project



- Collaborated with FAMIS IT- Manager to manage the Food Stamp and Disaster Food Stamp project.
- Leveraged project management expertise to delegate deliverables to a team of 20.

## Legislative Projects Managed:

- Cost of Living Adjustment (COLA) Adjustment Projects 2012,2013 and 2014, 2016,2017
- October Mass Adjustment 2012,2013, 2014, 2015, 2016,2017
- Federal Poverty Level (FPL) Adjustment Projects 2012, 2013, 2014, 2015, 2016,2017,2018
- SAB / BP / Vendor Adjustment Projects 2012, 2013 and 2014, 2016,2017
- CHIP Premium Adjustment- 2012, 2013 and 2014, 2015, 2016,2017
- FAMIS Interactive Voice Response (IVR) Project
- CALABRIO Workforce management (WFM) implementation

#### Project Manager - Department of Social Services

RKV Technologies Inc, Jefferson City, Missouri, 2010 - January 2011

Missouri Family Assistance Management Information System (FAMIS) Project

- Led resolution meetings and delegated work to a team of 15 to ensure successful project completion.
- Provided management project status updates; addressed and resolved clients' production issues.

Associate Principal - Missouri Family Assistance Management Information System (FAMIS) Project RKV Technologies Inc, Jefferson City, Missouri, August 2004 – 2009

- Served as team lead and senior business analyst for key modules in temporary assistance, family Medicaid, and adult Medicaid.
- Studied existing Medicaid policies to gain enhanced understanding and subsequently improve systems.
- Conducted Joint Requirement Planning (JRP) session to gather user requirements and Joint Application Design (JAD) sessions to finalize the design of key modules.
- Applied Agile Methodology principles to lead analysis, design and construction processes.
- Authored business and technical specifications pertinent to the project.
- Utilized project management expertise to develop a detailed project plan and schedule.

Technical Coordinator and Infrastructure Impact Assessment Team Coordinator HTC Global Services, Troy Michigan, January 1997 – July 2004

Technical Coordinator and Performance Coordinator
State Farm Insurance Companies, Bloomington, Illinois, July 2000 – July 2004

#### **Project Coordinator**

Bell and Howell Information and Learning, Ann Arbor, Michigan, January 1999 – June 2000

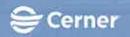
#### Team Lead

American College of Testing (ACT), Iowa City, IA, March 1997 - December 1998

#### Education

- Master of Science, Commerce H.P. University, Shimla, India, 1989
- Post-Graduation Diploma, Marketing Management H.P. University, Shimla, India, 1990

- Project Management Professional (PMP) Certification, August 2008, August 2020
- Certificate Course, Programming H.P. University, Shimla, India (Rank; 2)
- VB.Net Course- Lincoln University, Jefferson City, Missouri
- Certified Business Analyst State of Missouri



# Anil Kalia Operations Manager

#### **Professional Summary**

Certified Project Manager with over 15 years expertise in managing projects with excellent management, communication, and organizational skills across various functional areas. Leverages project management expertise and PMP Certification to lead the technical / business management of multiple concurrent projects in a multi-platform environment using onsite and off-shore resources. Has conducted Joint Requirement Planning (JRP), Joint Application Design (JAD) sessions and design reviews including Entity Relation Diagram (ERD), module reviews, and technical reviews with users and technical team.

## Relevant Experience

Senior Engagement Owner – Kansas Department of Health, Topeka, KS Cemer Corporation, Kansas City, Missouri, July 2018 – Present

- Manage complex client projects in highly-variable environments to achieve targeted outcomes
- Promote client value via identification of baseline metrics, key performance indicator (KPI) management, and resulting value objectives
- Act as an escalation point for client and project risks
- Ensure timely delivery of implementation project deliverables
- Coordinate implementation activities with prime contractor
- Respond to requests for information or resolution of comments from the IV&V contractor
- Provide timely project status updates to stakeholders; communicate project information to project team
- Support execution of cross-functional collaboration with internal and external stakeholders to
  execute client and methodology vision, objectives, and strategy driven by executive leadership
- Design, build, and maintain complex project plans based on contractual commitments

## Project Manager: ITSD – Department of Social Services Missouri Office of Administration, January 2011 – June 2018

Department of Mental health (DMH) 1115 application waiver project (Implement DMH waiver program into Missouri Family Assistance Management Information system (FAMIS))

 Worked with team to create project framework recommended by PMI in SharePoint and use JIRA system.

Geographical Interface System - Provider Search Project

- Lead project to create MAP search utility in the internet environment to enable Medicaid recipients to easily identify providers based on provider type and specified proximity.
- · Coordinated across 10 functional groups including ITSD, Business, and GIS teams.
- Ensured delivery of action items from over 20 non-direct report colleagues. Ensured timely completion of projects within defined scope.
- Provided strategic advice and insight to management regarding project status.

Geographical Interface System - MRT Search Project

 Led successful creation and implementation of MAP search utility for MRT providers within one month. The intranet application is primarily used by Eligibility Specialists in the Department of Social Services.

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- CHIP Premium Adjustment- 2012, 2013 and 2014, 2015, 2016,2017
- FAMIS Interactive Voice Response (IVR) Project
- CALABRIO Workforce management (WFM) implementation

## Project Manager - Department of Social Services

RKV Technologies Inc., Jefferson City, Missouri, 2010 - January 2011

Missouri Family Assistance Management Information System (FAMIS) Project

- Led resolution meetings and delegated work to a team of 15 to ensure successful project completion.
- Provided management project status updates; addressed and resolved clients' production issues.

Associate Principal - Missouri Family Assistance Management Information System (FAMIS) Project RKV Technologies Inc, Jefferson City, Missouri, August 2004 – 2009

- Served as team lead and senior business analyst for key modules in temporary assistance, family Medicaid, and adult Medicaid.
- Studied existing Medicaid policies to gain enhanced understanding and subsequently improve systems.
- Conducted Joint Requirement Planning (JRP) session to gather user requirements and Joint Application Design (JAD) sessions to finalize the design of key modules.
- Applied Agile Methodology principles to lead analysis, design and construction processes.
- Authored business and technical specifications pertinent to the project.
- Utilized project management expertise to develop a detailed project plan and schedule.

Technical Coordinator and Infrastructure Impact Assessment Team Coordinator HTC Global Services, Troy Michigan, January 1997 – July 2004

Technical Coordinator and Performance Coordinator State Farm Insurance Companies, Bloomington, Illinois, July 2000 – July 2004

Project Coordinator

Bell and Howell Information and Learning, Ann Arbor, Michigan, January 1999 – June 2000

#### Team Lead

American College of Testing (ACT), Iowa City, IA, March 1997 - December 1998

#### Education

- Master of Science, Commerce H.P. University, Shimla, India, 1989
- Post-Graduation Diploma, Marketing Management H.P. University, Shimla, India, 1990

- Project Management Professional (PMP) Certification, August 2008, August 2020
- Certificate Course, Programming H.P. University, Shimla, India (Rank: 2)
- VB.Net Course- Lincoln University, Jefferson City, Missouri
- Certified Business Analyst State of Missouri



## James (Jim) M. Peresta Certification Lead

#### Professional Summary

IT Professional with more than 30 years of experience in Medicaid Enterprise DDI and operations project management; Medicaid enterprise strategic planning; current understanding of CMS certification/APD/relationship activities; business analysis, system design and development experience; MMIS Modular Certification Manager.

#### Relevant Experience

## MMIS Certification Manager/Lead Engagement Owner

Cerner Corporation, Kansas City, Missouri, July 2019- Current

- Serving as the Montana Medicaid Data Analytics Population Health Certification Manager
- Ensuring the methodology and solution support clients efforts to achieve MMIS/MES/MECT 2.3 certification.
- Managing the planning and development of all MMIS modular certification activities (development
  of detailed Certification project plan for the R3 Certification Final Milestone Review, completion
  and delivery of Certification Evidence Packets (CEPs), planning of Certification Milestone review
  presentation and solution demos.)

#### **MMIS Associate Director**

Optum, Hilton Head Island, South Carolina, June 2018- May 2019

- Responsible for developing and maintaining the MMIS Requirements Traceability Matrix (RTM)
   for the SC ASO project
- Mapped RFP Requirements to MECT AND MEET v2.3 System Review Criteria (SRCs) for WV IE project for the MMIS certification effort.

#### MMIS Program Manager

Speridian Technologies, LLC, Vermont Agency of Human Services, Williston, Vermont, May 2017 to June 2018

- Supporting the Design, Development and Implementation (DDI) activities of Vermont's Medicaid Enterprise System (MES). Particular focus on strategic planning for procurement of Medicaid modules (PBM, Care Management, Provider Management, Program Integrity, Business Intelligence, Operations Management (Claims Processing, PA, Reference).
- Participated in Vermont's Certification of their Pharmacy Benefit Management (PBM) module receiving approval of CMS Certification (03/2018)

#### **MMIS** Consultant

JSE Consulting, Lincoln, Nebraska, August 2016 – April 2017

 Project Manager and Senior Business Analyst duties related to the modernization of the Nebraska MMIS Business process analysis and performance assessments for the assigned projects.

#### MMIS Project Manager, FL MMIS

Cambria Solutions, Inc. Tallahassee, FL, November 2015 -August 2016

Assisted State Medicaid Project Director and CIO with vendor's contract and amendment Oversee business requirements, functional design, prototyping, testing, training, and support

#### Medicaid Claims Consultant

TM Floyd & Company, Raleigh, NC, April 2015 – October 2015



 Technical Medicaid subject matter expert to define & resolve problem with high tech radiology and ultrasound claim/PA mismatch resolution between NCTracks and eviCore

#### Project Manager/ Senior Business Analyst

Quality Software Services, Inc. (QSSI), Baltimore, MD, November 2014 – April 2015

 Worked on Medicare/Medicaid Data Matching Pilot project, which loads and algorithmically matches Medicaid provider and beneficiary data against Medicare provider and beneficiary data in CMS' Integrated Data Repository (IDR)

#### Senior Medicaid Program Advisor

Software Consortium, Inc., Baltimore, MD, August 2013 - October 2014

- Collaborate with stakeholders of the MHBE, Maryland Dept. of Health and Mental Hygiene (DHMH), MD Department of Human Resources (DHR), and MD HIX IV & V staff to facilitate/resolve program design and development issues
- Ensure project deliverables' completion and that they meet State HIX requirements

#### Senior Business Analyst/Medicaid Subject Matter Expert

CSC/Maricom, CMS Master Data Management (MDM) \$105 million Contract - Baltimore, MD, September 2012 -August 2013

- Provide enterprise data services, identity resolution for Medicare and Medicaid beneficiaries and providers to support the agency's information systems
- Create MDM test plans, test case scenarios, and perform testing prior to production deployment

#### Senior Consultant

CGI, Baltimore, MD, August 2011 - September 2012

- Advisor for DDI of Colorado Health Benefit Exchange project
- MMIS Deputy Project Manager on procured MMIS contracts, health care systems consultant on assigned projects

#### Medicaid Health IT Specialist

Centers for Medicare and Medicaid Services (CMS), Center for Medicaid, Chip, Survey and Certification (CMCS), Baltimore, MD, November 2010 – August 2011

 Review State Medicaid Health Information Technology Plans (SMHP's) and Implementation Advanced Planning Documents (IAPD's) from State Medicaid programs for completeness and accuracy to approve/deny requests for CMS funding for Electronic Healthcare Provider Incentive Payment program

### Medicaid Subject Matter Expert

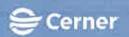
CNSI, SDMMIS Project, Pierre, SD, June 2008-October 2010

Functional Team Lead for Provider Management and Prior Authorization teams

## Education

- Bachelor of Arts Degree in Sociology, Arkansas State University, 1974
- Computer classes, Westark Community College, ongoing 1993-2003

- CMS' Contract Officer's Technical Representative Training Certification, 07/2011
- Project Management & MS Project 10/2007; Project Management 10/2005
- Consulting Skills DP Professionals, 12/89



## Scott McLeroy, PMP

**Documentation Management Lead** 

#### **Professional Summary**

Over 25 years of client centered relationship and project management experience with expertise in leading top performing teams from RFP through completion. Has over 11 years in healthcare consulting roles with focus in transaction advisory and strategic Health Care IT implementation.

#### Relevant Experience

Manager and Senior Engagement Owner, Consulting Cerner Corporation, Kansas City, Missouri, 2014 to present

State and Local Government Program Management oversight, contractual compliance, quality assurance and engagement owner development.

- State Department of Health Services (DHS) Adult and juvenile, civil and forensic, mental health care and substance abuse treatment, over 1,000 beds at three locations
  - Provided PMO Oversight Contract Management and Compliance, Risk Management
- State Department of Corrections (DOC) Adult medical and Juvenile dental and mental health services in the State's correctional facilities
  - o Created PMO Staging Risk Management, Governance Consulting
- Large Private Health Care System 14 hospitals and 350 facilities including ambulatory surgery, imaging, primary and specialty care, and cancer treatment.
  - o PMO Leadership Deliverables Oversight, Contract Compliance and Management
- State Department of Corrections (DOC) Adult medical, dental and mental health services to the State's prison, over 2,300 beds, 175,000 population at 35 locations
  - Engaged PMO Leadership: Quality Manager, Deliverables Management, Contract Management, Requirements Management, Project Quality Reporting
- Non-Profit 1,550 bed Hospital System, 22 locations Clairvia Workforce Implementation
  - Lead Project Manager Lead a conversion of Clairvia solutions resulting in a reduction of client's overtime expenses, optimized care quality, increased patient safety and controlled costs via real-time management of caregiver staffing

Corporate Development Principal – Healthcare Mergers and Acquisitions Business Transition Specialists, LLC. – Overland Park, Kansas, 2009-2014

 Prospecting target acquisitions; contract negotiations; valuations; pitch book creation; business case presentations; LOI construction; due diligence; and funding and closing management.

Strategy and Human Capital Consulting Manager

RSM - Kansas City, Missouri, 2007-2009

Consulting Manager of the Midwest Economic Unit

Transaction Advisory Principal

BTS, LLC, Overland Park, Kansas, July 2009-May 2014

 Developed new business focusing on buy-side strategic global acquisitions with mid-market healthcare services. Activities included: prospecting strategic and economic buyers and sellers;



NDA negotiations; pre-due diligence interviews and introductions; valuations; pitch book creation; business case presentations; LOI construction; price and terms negotiations; due diligence; definitive agreement negotiations; and funding and closing management.

Strategy and Human Capital Consultant Manager RSM, Kansas City, Missouri, June 2007 – July 2009

- Business development lead for strategy and human capital consulting services in the Midwest markets with industry focus on pharmaceutical, bioscience, agriculture and real estate industries.
- Produced proposals, deliverables and results for international clients working through their board level leadership teams

#### Education

University of Kansas – Lawrence, KS Bachelor of Science in Aerospace Engineering, 1993

#### Certifications and Training

Project Management Institute
Project Management Professional (PMP), 2017, Expiration: April 2023



## Amy Henry Quality Assurance Manager

#### **Professional Summary**

Over 18 years of experience in the information technology sector specializing in software development, testing/quality assurance processes, and portfolio (program & project) management. Technical project manager for the State and Public Health, Portfolio Area Leader for the Clinical and Global Strategic business units, Project Lead for Program Management Office, Software Engineer with emphasis in creation, execution and monitoring processes. Qualifications include application development, project management, subcontractor management, contract management, requirement analysis, schedule, cost, testing and quality.

#### Relevant Experience

## Lead Engagement Owner

Cerner Corporation, Kansas City, Missouri, 2017-Present

- Created and measure processes
- Managed of quality metrics and reporting
- Created quality measurements for all processes
- Managed tools for quality
- Root caused analysis for quality issues
- Worked with team to mitigate quality issues

## Portfolio Area Lead for Engineering Strategy and Ops Cemer Corporation, Kansas City, Missouri, 2013-2017

- Managed clinical and global portfolio CSBU, as well as capitalization targets for both CBSU and IP.
- Managed best practices and guides for PM using PMBOK® guidelines.
- Provide KT on investment and agile processes to all strategist in CSBU
- Measuring quality of project workplan execution and efficiencies of associate performance and processes.
- Developed and maintained processes for IP project management, including quality assurance measures, quality checks, and analyzing variances.

#### Project Lead for Program Management Office

Cerner Corporation, Kansas City, Missouri 2007- 2012

- Managed projects for upcoming enhancements and change requests for engineering
- Managed releases made to London Programmer
- Managed UK escalations into SolutionWorks and IP engineering
- Reported statistics on OBL, on-time delivery, etc.
- Participated in the creation of the investment process
- Measuring quality of project workplan execution and efficiencies of associate performance and processes
- Measuring testing processes and obtaining performance metrics around testing processes.
- Testing defects and performing root cause analysis.

#### Senior Software Engineer

Cemer Corporation, Kansas City, Missouri 2001-2006



- Designed, coded, tested and implemented applications using CCL and Visual Basic
- Managed Tier2 backlog and assigned resources for investigation
- Managed incremental project plan

#### Education

- Bachelor of Science, Computer Information Systems, Central Missouri State University, 1998
   Certifications and Training
  - Project Management Professional, PMI, June 2009, Expiration: June 2021



## Lauren Eckhard Test Manager

#### **Professional Summary**

Ms. Eckhard holds an MPA in Health Care Administration from the University of Missouri – Kansas City Bloch School of Business. She has more than five (5) years of experience leading testing efforts with a health and human services system across large variety of programs. She has served as the Testing Lead for the State of MT, MPATH project (Medicaid) for more than one (1) year. In this capacity, Ms. Eckhard oversees all project testing activities, performs quality control on test scripts and evidence, maintains a detailed view of testing status, and produces test results and other documentation, as needed. She brings over ten years of experience with Medicaid programs. She was instrumental in tailoring the requirements traceability tool and processes Cerner uses for Medicaid projects. Lauren has over ten years' experience in the health care and social services fields. She excels in collaborating with technical experts to develop policies and procedures and to ensure adherence of work products to defined standards.

#### Relevant Experience

## Senior Engagement Controller

Cerner, Kansas City, Missouri, July 2018 - present

- Key project team member for Medicaid market implementing data warehouse and population health solutions
- Support Cerner and client Project Management teams to track project management execution
- Maintain detailed view of project requirements, testing status, and testing progress
- Partner with project team to identify priorities, assign resources, and address project blockers
- · Ensure that project management and testing documentation is timely and complete
- Assess, review, and track project change requests, issues, risks, and decisions

#### Lead Performance Excellence Specialist

Cornerstones of Care, Kansas City, Missouri, October 2012 - July 2018

- Research, recommend, and implement best practices based on industry and company standards
- Serve as a key team member for electronic health record implementation and optimization
- Identify and track business use cases for EHR across multiple clinical and social services programs
- Evaluate impact of requested changes to EHR system and clinical processes
- Test and validate reports and system updates to ensure successful implementation
- Prepare and distribute electronic user manuals for forms and reports in the EHR
- Led project management process for successful agency accreditation and certification

#### Program Coordinator

Cornerstones of Care, Kansas City, Missouri, August 2009 – October 2012

- Developed written program policies and procedures in collaboration with program leaders
- · Provided written guidance and daily oversight of work processes for program staff

#### Volunteer & Community Development Specialist

AmeriCorps\*VISTA, Kansas City, Kansas July 2008 - July 2009

· Developed program policies and procedures and increased accountability of volunteers and staff

#### Family Support Eligibility Specialist

Missouri Department of Social Services, Kansas City, Missouri July 2007 – July 2008

- Successfully met performance goals for knowledge of work, quality of work, and dependability
- Medicaid eligibility systems

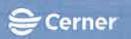
#### Education



- Master of Public Administration, Health Care Administration, University of Missouri- Kansas City, Bloch School of Business, 2014
- Bachelor of Science, Summa Cum Laude, Truman State University, Kirksville, Missouri, 2007

## Certifications and Training

 Project Management Professional (PMP) – Project Management Institute, September 2019, Expiration: September 2022



# Chris Adams, CISSP Information Security Architect / Privacy Data Protection Officer

## **Professional Summary**

Mr. Adams has more than twenty (20) years of IT security work experience including infrastructure/network and multi-platform development environments. Additionally, he holds his CISSP certification and is experienced in technical and risk assessment techniques, tools, and practices. He is familiar, through his work on various federal IT projects, with federal security and privacy requirements and their application in IT projects, during both the implementation and the maintenance and operations phases. He has designed and implemented security programs for large-scale IT systems that ensure the security and privacy of the information they contain.

#### Relevant Experience

Senior Government, Risk and Compliance Security Analyst Cerner Corporation, Kansas City, MO, July 2018 – Current

- Security and Audit programs for the Department of Defense, Veterans Administration, and the Center of Disease Detection. These programs required partnering with government agencies to achieve a secure environment. Certification and accreditation programs required full authority to operate (ATO).
- Responsible for state programs dealing with securing environments for state/federal agencies.
   Mapping security controls and audits to comply with state and federal agencies.
- Review and audit of DOD NIST enclave, PCI DSS, and SOC2 + NIST programs.
- GRC NIST compliance program to ensure company controls map to NIST Moderate/High controls compliance.

Director of Information Technology

LabCorp, Burlington, NC, Aug 2012 – Jun 2018

- Security, risk assessment and governance of commercial networks and military quarantined networks with full encryption of all data.
- Military reporting of government Defense Health Agency (DHA) security program into eMASS environment with government CAC/PIV access.
- Security/Audit program created to comply with NIST standards on government Risk Management
  Framework. These standards apply CCI level controls to allow commercial company to operate
  under government contracts. Identity and Access Management of all resources (building, data,
  systems, resources, training etc.) are provided under this program. These policies and procedures
  addressed all legal, physical and technical controls in an organization information risk management
  process. (NIST SP800.37-39, ISO® 2700X, and HIPAA)
- Built and mentored a very dynamic team of management/senior staff individuals with strong leadership skills and direction. Provided the company with long term strategic vision which allowed for business partners into new markets including military and department of health (DOH) contracts.
- Provide strategic direction of Information Technology areas which supported multiple business units
  to include enterprise applications, security, operations, systems and ITSM support. This direction
  was based on understanding business needs and future goals of the organization.
- Managed a diverse application development enclave which allowed the use of Agile and DevOps practices within our cooperate development environments.
- Created Information Technology standard operating procedures for IT operations, IT health care
  data protection (HIPAA) and government security requirements. Developed security standards and
  policy to address controls based on NIST standards, RMF Framework and FISMA.



- Responsible for all levels of security regarding access to the facilities and data. Due to the information we maintain access to data and entry points to the building are under IT control. Several forms of ID are controlled, tracked and monitored to include positive ID badges, access codes, biometric sensors and video surveillance.
- Established Software Development and Lifecycle Process (SDLP) based on CMS government best practice medical standards. Standards are HIPAA, PII and PHI complaint.

#### Assistant Director of Application Development

South Texas Blood and Tissue Center (STBTC), San Antonio, TX, Oct 2010 - Aug 2012

- Team was responsible for all requirement gathering enterprise, solution design, and development. Application support and help desk support was required from this team of individuals on new initiatives and legacy applications.
- Security/Audit program created to comply with NIST IT security standards working with PII data, systems, resources and training). These policies and procedures addressed legal, physical and technical controls in an organization information risk management process. (NIST SP800.37-39, SP800-53, ISO® 27000-Series, and HIPAA)
- Established Software Development and Modification Process (SDMP) based on FDA device standards.

### Sr. Enterprise Architect

American Electric Power (AEP), Tulsa, OK, June 1998 - Sep 2010

- Established security controls and policies related to application development, to include: SOX
  requirements and separation of duties, integrality of data, availability of systems and overall
  change management procedures. These policies and procedures were used by more than 400 IT
  employees.
- Developed security risk assessment of application development and PII data held by for a large enterprise company with over five million customers.
- Developed programs to ensure teams were following enterprise standards with a focus on continued learning. IT employees were made part of the process which aided in the buy-in to the standards and governance process.
- Established Enterprise Architect policy and procedures that successfully allowed enterprise standards to be adopted into the culture of the company. These standards were driven and governed by SME's around AEP's core application portfolio.

Application Development Manager WorldCom/Sprint, Tulsa, OK, Nov 1994 – June 1998

Air Traffic Controller United States Air Force, Alamogordo, NM, Oct 1988 – Oct 1994

- Certified Information System Security Professional (CISSP) ISC2
- ISC2 Certified Information System Security Professional (CISSP) Training
- Government Military Security Controls/ISO® Security standards
- RMF (Risk Management Framework) NIST IT Government Controls
- HIPAA security law and security rule
- Carnegie Mellon Software Engineering Institute (SEI) Enterprise Architecture
- Total Open Group Architecture Framework (TOGAF Architecture)
- ITIL® Business Process Management
- USAF Leadership School Graduated First in Class John Levitow Leadership Award
- EDI Programming and System Architecture



#### 3.2 References

The Vendor should provide three (3) references for which each proposed key staff candidate has successfully demonstrated meeting the requirements of the RFP. The name of the person to be contacted, phone number, client name, address, brief description of work, and date (month and year) of employment should be given for each reference. These references should be able to attest to the candidate's specific qualifications. The reference given should be a person within a client's organization and not a co-worker or a contact within the Vendor's organization.

Vendors should use the format provided. Please repeat the rows and tables as necessary.

Table 22 Key Staff References (RFP Table 17)

lable 22 Kev Staff Ref	erences (	RFP Table 17)							
		Key P	ersonnel Re	eference	Form				
Key Personnel N	ame:	Stan Park		Pro	posed R	ole:	Account Manager		er
			Referen	ce 1					
Client Name:	Depar	of Montana rtment of Public n and Human ces	Client Add	dress:	7 W 6 <sup>th</sup> 59601	¹ Ave,	Suite 2	B, Helena	a, MT
Contact Name:	Gene	Hermanson	Contact T	itle:	Montana Program for Automating an Transforming Healthcare (MPATH) Program Director			-	
Contact Phone:	(406)	841-5021	Contact E	-mail:	ghermanson2@mt.gov				
Project Name: Montana Program for Automating and Transforming Healthcare (MPATH) Data Analytics Population Health (DAPH)				Start Date:	03/	2018	End Date:	07/2023	

**Project Description:** By implementing advanced population health data analytics, DPHHS will improve Medicaid outcomes through a comprehensive population health management program. It will enable the creation of comprehensive, actionable statistical profiles of health care delivery and utilization, which will allow the Department to create and optimize policies that benefit the entire ecosystem.

Project Role and Responsibilities: As the Contract Manager key resource for the State of Montana contract, Mr. Park is the single point of contact to the Department Contract Manager with responsibility for the coordination of all Contract issues under this Contract. Mr. Park meets with the Department's Contract Manager and/or others necessary to resolve any conflicts, disagreements, or other Contract issues. Mr. Park is able to make binding decisions pursuant to this Contract for Cerner and approve Change Orders for Cerner.

Reference 2									
Client Name:	Kansas Department of Health and Environment	Client Address:	900 SW Jackson Ave, Suite 900 North Topeka, KS 66612						
Contact Name:	Adam Proffitt	Contact Title:	Medicaid Director						
Contact Phone:	(785) 296-3563	Contact E-mail:	adam.proffitt@ks.gov						



Project Name: Kansas Modular Medicaid System (KMMS)	Start Date:	01/2016	End Date:	06/2022
	1			1

**Project Description:** Kansas Department of Health and Environment (KDHE) is implementing the Kansas Modular Medicaid System (KMMS), following MMIS modularity guidelines defined by Centers of Medicare and Medicaid Services (CMS). Cerner has contracted to implement the data warehouse solution HealtheEDW as part of KMMS. The Data Warehouse and Analytics (DWA) work performed by Cerner is in support of Module 8 (Mod 8). Medicaid- Merging claims and administrative data from the MMIS with clinical data from the state's HIX and other EHR data sources to support a 360-degree view of their population.

Project Role and Responsibilities: As the Account Manager assigned to the State of Kansas contract as a subcontractor to DXC, Mr. Park is the single point of contact to DXC and KDHE for Module 8 with responsibility for the coordination of all account and contract issues. Mr. Park meets with DXC and KDHE executives and/or others necessary to resolve any conflicts, disagreements, or other contract issues. Mr. Park is able to make binding decisions pursuant to this Contract for Cerner and approve Change Orders for Cerner.

:		Reference 3					
Client Name:	State of Kansas, State Employee Health Plan (SEHP)  Client Address: 900 SW Jackson Ave, Suite 900 North Topeka, KS 66612						
Contact Name:	Mike Michael	Contact Title:	Director - State Employee Health Benefits Plan				
Contact Phone:	(785) 296-0221	Contact E-mail:	mike.michael@ks.gov				
Project Name: State of Kansas Wellness Program Administrative Services				07/2019	End Date:	06/2022	

**Project Description:** In 1988, the Commission developed and implemented a health promotion plan for the purposes of containing health care costs for State employees and to reduce the expense of the health benefit plan. The mission of HealthQuest is to form a partnership with plan participants to assist them in reducing the cost and utilization of health care services through initiatives targeting risk reduction, enhanced self-care, and general health improvement. The HealthQuest wellness program was established in 1988 and is currently staffed by the Cerner Wellness team.

Project Role and Responsibilities: As the Client Account Executive assigned to the State Employee Health Plan wellness contract, Mr. Park is the client focal point with responsibility for the coordination of all account and contract issues. Mr. Park meets with SEHP and Division of Finance management and/or others necessary to resolve any conflicts, disagreements, or other contract issues. Mr. Park is able to make binding decisions pursuant to this Contract for Cerner, negotiate Performance Guarantees (PGs) and approve Change Orders for Cerner

Key Personnel Reference Form									
Key Personnel Name: Ashok Ramanjanappa Proposed Role: Project Manager									
Reference 1									
Client Name: State of Michigan Client Address: 400 S Pine St, Lansing, MI 48933					St, Lansing, MI 48933				



Contact Name:	Dave McLaury	Contact Title:	Former Chief Deputy Director				
Contact Phone:	517-242-7048	Contact E-mail:	mclaury@gmail.com				
Project Name: Community Healt System (CHAMP	h Automated Medicaid l S)	Processing	Start Date:	04/2006	End Date:	09/2009	

### **Project Description:**

Implement a new state of the art web-based Medicaid Management Information System to replace the 30 plus year Mainframe legacy system. CHAMPS is a one stop shop integrating multiple modules (Provider, Common Components, Benefits Administration, Claims, Encounters, Prior Authorization, Customer Relationship Management, Financials, Eligibility and Enrollment, and Contracts Management) into one MMIS system.

#### **Project Role and Responsibilities:**

As a Functional Manager, was the single point of contact for the State of Michigan for management of the Requirements, Design, Testing, and UAT phases of the project.

Created the project schedule to identify all the tasks needed to execute, monitor, and manage the Requirements, Design, Testing, and User Acceptance Testing phases of the CHAMPS project.

Facilitated and managed the requirements and design joint application design (JAD) sessions with the State of Michigan subject matter experts and other relevant stakeholders and ensured the requirements documents and design documents were created, approved by the State, and baselined within the agreed upon timeframe and budget as per the schedule.

Managed the system testing and user acceptance testing phases by monitoring and guiding the test team and providing periodic status on the progress of testing to the State's management team.

Identified, tracked, managed, and resolved the risks, issues, and discrepancies pertaining to the Requirements, Design, Testing, and UAT phases of the project.

Participated in the integrated project management meetings and leadership meetings to manage the change management and risk management processes.

Worked with the State of Michigan's DTMB team and project team to design and implement a thorough Business Continuity & Disaster Recovery plan and test.

Worked with the State in identifying and creating project artifacts for certification and helped the State in achieving CMS certification of CHAMPS.

Reference 2									
Client Name:	State of Illinois	Client Address:	400 S Pine St, Lansing, MI 48933						
Contact Name:	Barbara Spadafore	Contact Title:	Program Manager (Consultant)						
Contact Phone:	734-276-5433	Contact E-mail:	spadaforeb@michigan.gov						
Project Name: IMPACT (Illinois Michigan Program Alliance for Core Technology)				03/2014	End Date:	07/2015			
Project Descripti	on:			1					



To implement a state-of-the-art MMIS for the State of Illinois over the cloud as a tenant to the State of Michigan's cloud MMIS system in a phased approach. The first two modules were eMIPP and Provider Enrollment.

## Project Role and Responsibilities:

As a project director, worked with the State of Michigan and State of Illinois to create Intra Government Agreement. Created an Integrated Master Schedule to incorporate all the tasks needed by all the stakeholders to implement the eMIPP and Provider Enrollment modules.

Facilitated and monitored the Requirements, Design, Development, Testing, User Acceptance Testing, and Training phases of the two-module implementation.

Identified, managed, resolved, and mitigated the risks, issues and discrepancies identified in the projects.

Managed the change management process; oversaw and managed all the changes that were identified in the projects.

Worked with the IV&V vendor to create monthly progress reports for CMS.

Worked with the IV&V vendor to create necessary artifacts for Certification milestone review.

Worked with the State of Michigan's DTMB, State of Illinois' Department of Information Technology team, and project team to design and implement a thorough Business Continuity & Disaster Recovery plan and test.

		Reference 3				
Client Name:	State of Michigan	State of Michigan Client Address: 400 S Pine St, Lansing, MI 48933				
Contact Name:	Keelie Honsowtiz	Contact Title:	Third Party Liability Division Director			
Contact Phone:	517-490-9773	Contact E-mail:	honsov	wtizk@michig	jan.gov	
Project Name: CHAMPS Cloud Implementation				08/2015	End Date:	01/2018

#### **Project Description:**

To implement a state-of-the-art Medicaid Management Information System for the State of Michigan on the Cloud. Transform the existing CHAMPS into a cloud based MMIS.

#### **Project Role and Responsibilities:**

As a project director, worked with the State of Michigan and other stakeholders to create an Integrated Master Schedule to implement MMIS in the cloud.

Facilitated and monitored the Requirements, Design, Development, Testing, User Acceptance Testing, and Training phases of the implementation.

Worked with the State of Michigan's Department of Technology in procuring and standing up the Cloud hardware and environments that are needed for the cloud implementation.

Worked with the IV&V to create monthly progress reports for CMS.

Identified, managed, resolved and mitigated the risks, issues, and discrepancies identified during implementation.

Managed the change management process; oversaw and managed all the changes that were identified in the projects.

Worked with the State to identify parallel test scenarios and execute a thorough parallel testing to compare the existing CHAMPS results with the Cloud MMIS and take necessary actions, if required.



Worked with the State of Michigan's DTMB team and project team to design and implement a thorough Business Continuity & Disaster Recovery plan and test.

		Key P	ersonnel Referen	e Form			
Key Personnel Name: Ross Merritt		Pr	posed R	ole: Busine	Business Lead		
			Reference 1			,	
Client Name:		ana Department alth and Human ces	Client Address:	7 W 6th Ave, Suite 2B Helena, MT 59601			
Contact Name:	Gene	Hermanson	Contact Title:	MMIS	Program Dire	ector	
Contact Phone:	406-4	38-5364	Contact E-mail:	Gherm	anson2@mt.	gov	
Project Name:  Montana Program for Automating and Transform Healthcare (MPATH)			sforming	Start Date:	03/2018	End Date:	06/2023

#### **Project Description:**

DPHHS and Cerner are implementing systems and operational changes in order to provide DPHHS with advanced population health data analytics to serve the State's Medicaid population. By implementing advanced population health data analytics, DPHHS will improve Medicaid outcomes through a comprehensive population health management program.

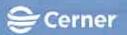
#### Project Role and Responsibilities:

Consult with client to develop and execute analytics strategies that address client-specific business challenges. Includes complex data acquisition, data integration and analysis projects across financial, clinical, and operational venues, with an emphasis on client's Medicaid Management Information Systems (MMIS). Lead the design and build of advanced data management solutions that provide data acquisition, data quality, data transformation, master data management, and integration of data from disparate sources.

		Reference 2					
Client Name:	Nevada Medicaid Program	Client Address:	1100 East William St. Suite 102 Carson City, NV 89701				
Contact Name:	Karen Gore	Contact Title:	Senior Business Analyst				
Contact Phone:	919-790-7873	Contact E-mail:	Karen.gore@dxc.com				
Project Name: Nevada MMIS			Start Date:	11/2013	End Date:	06/2015	

#### **Project Description:**

The Nevada Divison of Health Care Financing is using DXC to implement their MMIS. DXC processes medical and pharmacy claims as well as reviews and processes prior authorization requests in addition to utilization management and personal care reviews for the state. DXC also assists the Medicaid program in connecting healthcare providers with critical health information to improve overall care.



DXC also aids the state in detecting potential fraud and abuse cases while improving the efficiency of claims processing. DXC contracts with IBM Watson for their decision-support software application, enabling better decision making through more accurate and up-to-date information. All of these steps are designed to lower the risks, costs and challenges associated with the state's Medicaid program.

#### Project Role and Responsibilities:

Consult with client to develop and execute analytics strategies that address client-specific business challenges. Includes complex data acquisition, data integration and analysis projects across financial, clinical, and operational venues, with an emphasis on client's Medicaid Management Information Systems (MMIS). Lead the design and build of advanced data management solutions that provide data acquisition, data quality, data transformation, master data management, and integration of data from disparate sources.

Reference 3									
Client Name:	Kansas Department of Health and Environment	Client Address:	900 SW Jackson Ave, Suite 900 North Topeka, KS 66612						
Contact Name:	Brett Ellis	Contact Title:	Data Analyst						
Contact Phone:	7853122765	Contact E-mail:	Brett.ellis@dxc.com						
Project Name: Truven Data Anal	ytic Interface (DAI)		Start Date:	01/2009	End Date:	04/2014			

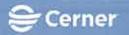
## **Project Description:**

Consult with client to develop and execute analytics strategies that address client-specific business challenges using Truven's proprietary decision support system application called Advantage Suite

### **Project Role and Responsibilities:**

Lead analyst for our Medicaid and Employer client in the state of Kansas, for which there was a large database combining Medicaid data, Employer data, and private insurer data. Clarify scope and design issues, communicate status and results, develop appropriate deliverable documentation, ensure that training is provided. Define problems and recommend appropriate solutions considering the project budget, the sophistication of the user and the intended use of project results. Operate independently with clients at client's location.

		Key P	ersonnel Referer	nce Form	
Key Personnel N	ame:	Nathan Gray	P	roposed Role:	Technical Lead
			Reference 1		
Client Name:	Depa	of Montana rtment of Public h and Human ces	Client Address	7 W 6 <sup>th</sup> Ave 59601	, Suite 2B, Helena, MT
Contact Name:	Gene	Hermanson	Contact Title:		ogram for Automating and ng Healthcare (MPATH) rector
Contact Phone:	(406)	841-5021	Contact E-mail	l: ghermansoi	n2@mt.gov



#### **Project Description:**

By implementing advanced population health data analytics, DPHHS will improve Medicaid outcomes through a comprehensive population health management program. It will enable the creation of comprehensive, actionable statistical profiles of health care delivery and utilization, which will allow the Department to create and optimize policies that benefit the entire ecosystem.

#### Project Role and Responsibilities:

As the Technical Lead key resource for the State of Montana, Mr. Gray was responsible for aligning Cerner technology with MPATH use cases to provide the most comprehensive and stable solution. Specifically, Mr. Gray was responsible to defining technical strategies related to authentication, authorization, ETL, measure calculations, reporting, regulatory submission and auditing. When significant change was necessary, Mr. Gray presented proposed solutions and collaborated with MPATH to align work with client value and ensure SDLC processes were adhered. Example changes include integrated a new SI, a new authentication system and presenting on benefits of new Cerner technology which MPATH might wish in leverage.

		Reference 2					
Client Name:	Kansas Department of Health and Environment	Client Address:	900 SW Jackson Ave, Suite 900 North Topeka, KS 66612				
Contact Name:	Adam Proffitt	Contact Title:	Medicaid Director				
Contact Phone:	(785) 296-3563	Contact E-mail:	adam.proffitt@ks.gov				
Project Name: Kansas Modular Medicaid System (KMMS)			Start Date:	01/2016	End Date:	06/2022	

#### **Project Description:**

Kansas Department of Health and Environment (KDHE) is implementing the Kansas Modular Medicaid System (KMMS), following MMIS modularity guidelines defined by Centers of Medicare and Medicaid Services (CMS). Cerner has contracted to implement the data warehouse solution HealtheEDW as part of KMMS. The Data Warehouse and Analytics (DWA) work performed by Cerner is in support of Module 8 (Mod 8). Medicaid- Merging claims and administrative data from the MMIS with clinical data from the state's HIX and other EHR data sources to support a 360-degree view of their population.

#### Project Role and Responsibilities:

As the Technical Lead assigned to the State of Kansas as a subcontractor to DXC, Mr. Gray was responsible for aligning Cerner technology with KDHE use cases to provide the most comprehensive and stable solution. Specifically, Mr. Gray was responsible to defining technical strategies related to authentication, authorization, ETL, measure calculations, reporting, regulatory submission, and auditing. When significant change was necessary, Mr. Gray presented proposed solutions and collaborated with KDHE to align work with client value and ensure SDLC processes were adhered. Example changes include integrating new data sources, exposing de-identified data to external groups, and presenting on benefits of new Cerner technology that KDHE might wish to leverage.

Reference 3									
Client Name: Advocate Aurora Health		Client Address:	3075 Highland Parkway, Suite 600 Downers Grove, IL 60515						
Contact Name:	Mary Gagen	Contact Title:	VP, Analytics & Innovation						



Contact Phone:	(630) 929-6774	Contact E-mail:	mary.gagen@advocatehealth.com				
Project Name: Advocate Aurora	lealth EDW		Start Date:	11/2014	End Date:	8/2018	

## **Project Description:**

Advocate Aurora Health is one of the largest integrated health systems serving over 2.7M unique patients including large Medicare, Medicaid, commercial payer and employee populations. With nearly a million patients subject to alternative payment models, Advocate Aurora embarked on a comprehensive EDW to determine how to best care for each patient including quality and efficiency benefits.

### **Project Role and Responsibilities:**

As the Sr. Strategist assigned to Advocate Aurora Health, Mr. Gray provided technical strategies and lead a team to integrate data from over 40 different source systems to evaluate quality and efficiency improvements. Mr. Gray collaborated with Advocate Aurora to design reusable data marts to investigate a wide range of topics such as effectiveness of follow up visits at preventing readmission, evaluating quality using a wide range of quality measures and evaluating patient satisfaction correlation with clinical outcomes. Mr. Gray led a team to conduct the full lifecycle including specification gathering, data loading, data validation, transformations, report creation and report validation.

		Key	Personnel Re	ference	Form				
Key Personnel Name:		Anil Kalia	Propo		posed Role:		Implementation Manage		Manager
			Referen	ce 1					
Client Name:	State	of Missouri	lissouri Client Address: Jefferson City, Missouri						
Contact Name:	Vipan	Malhotra	Contact T	itle:	Technical Architect (Senior Specialist)				pecialist)
Contact Phone:	(573)	526-2461	Contact E	-mail:	Vipan.malhotra@oa.mo.gov				
Project Name: MISSOURI Family Assistance Manageme			ment	Start Date:	08.	/2004	End Date:	06/2015	

#### **Project Description:**

FAMIS project is to provide <u>Public assistance</u> to help Missourians with food stamps, health care, child care, child support, blind services and other basic needs and <u>Health care coverage</u> for eligible Missourians

#### Project Role and Responsibilities: (Project Manager)

- Lead the daily problem resolution meetings.
- · Weekly status reports of consultants to top management
- Worked with the client to resolve everyday issues in the production environment.
- Assisted FAMIS IT- Manager to oversight the Food Stamp and Disaster Food Stamp project.
- Assisting FAMIS IT- Manager in implementing Project management methodology as defined by Project Management Institute.
- Assigned work to team of 20 people for smooth operation of FAMIS system.
- Responsible for conducting and Joint Application Design (JAD) sessions to finalize the design of key modules.
- Applied Agile Methodology principles to analyse, design and construction
- Written business and technical specification



- Assisted Project Management in implementing Project management methodology as defined by Project Management Institute.
- Created the detailed Project Plan and project schedule for Family Medicaid project.

		Reference 2				
Client Name:	State of Missouri	Client Address:	Client Address: Jefferson City, Missouri			
Contact Name:	Lynn Ratchford	Contact Title:	Testing Manager			
Contact Phone:	(573) 522-1166	Contact E-mail:	Lynn.Ratchford.oa.mo.gov			
Project Name: MISSOURI Family Assistance Management Information System (FAMIS) Project				03/2014	End Date:	12/2017

FAMIS project is to provide <u>Public assistance</u> to help Missourians with food stamps, health care, child care, child support, blind services and other basic needs and <u>Health care coverage</u> for eligible **M**issourians

#### Project Role and Responsibilities:

- Lead the daily problem resolution meetings.
- Weekly status reports of consultants to top management
- Worked with the client to resolve everyday issues in the production environment.
- Assisted FAMIS IT- Manager to oversight the Food Stamp and Disaster Food Stamp project.
- Assisting FAMIS IT- Manager in implementing Project management methodology as defined by Project Management Institute.
- Assigned work to team of 20 people for smooth operation of FAMIS system.
- Responsible for conducting and Joint Application Design (JAD) sessions to finalize the design of key modules.
- Applied Agile Methodology principles to analyse, design and construction
- Written business and technical specification
- Assisted Project Management in implementing Project management methodology as defined by Project Management Institute.
- Created the detailed Project Plan and project schedule for Family Medicaid project.

		Reference 3				
Client Name:	State Farm Insurance	Client Address:	Bloomington, IL			
Contact Name:	Sridhar Krishnan	Contact Title:	Project Manager			
Contact Phone:	(309) 287-3156	Contact E-mail:	Sridhar.krishnan@yahoo.com			
Project Name: Creation of "Self Help Knowledge Database" using eGain application (Web Based)				07/2002	End Date:	07/2004

#### **Project Description:**

Creation of "Self Help Knowledge Database" using eGain application (Web Based)

#### Project Role and Responsibilities:

Technical Coordinator and Infrastructure Impact Assessment (IIA) - Team Coordinator

Made decisions/recommendations and set/influence technical directions in the projects



- Assisted project managers in project charter, project planning and execution of projects
- Identified and led appropriate technical teams concurrently
- Facilitated modeling sessions with business analysts and business partners
- Interfaced with consultants, vendors, Legal, Administrative services and System technology area on technical issues of the project.
- Opened, managed, and escalate issues within and across projects
- Assisted team members in identifying and resolving technical problems
- Coordinated the technical tasks within the implementation plan, such as connectivity and hardware deployment.
- Worked with the stakeholders and other projects/programs
- Identified technical areas that need to be involved and coordinated
- Monitored enterprise publications for announcements impacting the project
- Assisted in developing technical documentation of the projects (Detailed Technical System Design)
- Coordinated transition and Knowledge transfer from project resources to Service resources, help desk, command center and regional centers
- Closely coordinated with Project Managers, Sponsors and Stakeholders to resolve issues and to provide status report

		Key	Personnel Re	ference	Form				
Key Personnel Name: Anil Kalia			Proposed Role:		ole:	Operations Manager		ager	
			Referen	ce 1					
Client Name:	State	e of Missouri Client Address:		Jefferson City, Missouri					
Contact Name:	Vipan Malhotra		Contact T	itle:	Technical Architect (Senior Specialis			pecialist)	
Contact Phone:	(573)	526-2461	Contact E	-mail:	Vipan.malhotra@oa.mo.gov				
Project Name: M Information System		-	tance Manage	ment	Start Date:	08	/2004	End Date:	06/2015

FAMIS project is to provide <u>Public assistance</u> to help Missourians with food stamps, health care, child care, child support, blind services and other basic needs and <u>Health care coverage</u> for eligible Missourians

#### Project Role and Responsibilities: (Project Manager)

- Lead the daily problem resolution meetings.
- Weekly status reports of consultants to top management
- Worked with the client to resolve everyday issues in the production environment.
- Assisted FAMIS IT- Manager to oversight the Food Stamp and Disaster Food Stamp project.
- Assisting FAMIS IT- Manager in implementing Project management methodology as defined by Project Management Institute.
- Assigned work to team of 20 people for smooth operation of FAMIS system.
- Responsible for conducting and Joint Application Design (JAD) sessions to finalize the design of key modules.



- Applied Agile Methodology principles to analyse, design and construction
- Written business and technical specification
- Assisted Project Management in implementing Project management methodology as defined by Project Management Institute.
- Created the detailed Project Plan and project schedule for Family Medicaid project.

		Reference 2				
Client Name:	State of Missouri	Client Address:	Jeffers	on City, Miss	souri	
Contact Name:	Lynn Ratchford	Contact Title:	Testing Manager			
Contact Phone:	(573) 522-1166	Contact E-mail:	Lynn.Ratchford.oa.mo.gov			
Project Name: MISSOURI Family Assistance Management Information System (FAMIS) Project				03/2014	End Date:	12/2017

FAMIS project is to provide Public assistance to help Missourians with food stamps, health care, child care, child support, blind services and other basic needs and Health care coverage for eligible Missourians

#### Project Role and Responsibilities:

- Lead the daily problem resolution meetings.
- Weekly status reports of consultants to top management
- Worked with the client to resolve everyday issues in the production environment.
- Assisted FAMIS IT- Manager to oversight the Food Stamp and Disaster Food Stamp project.
- Assisting FAMIS IT- Manager in implementing Project management methodology as defined by Project Management Institute.
- Assigned work to team of 20 people for smooth operation of FAMIS system.
- Responsible for conducting and Joint Application Design (JAD) sessions to finalize the design of key modules.
- Applied Agile Methodology principles to analyse, design and construction
- Written business and technical specification
- Assisted Project Management in implementing Project management methodology as defined by Project Management Institute.
- Created the detailed Project Plan and project schedule for Family Medicaid project.

		Reference 3				
Client Name:	State Farm Insurance	Client Address:	Bloomington, IL			
Contact Name:	Sridhar Krishnan	Contact Title:	Project Manager			
Contact Phone:	(309) 287-3156	Contact E-mail:	Sridhar.krishnan@yahoo.com			
Project Name: Creation of "Self I application (Web	Help Knowledge Databas Based)	e" using eGain	Start Date:	07/2002	End Date:	07/2004
Project Descripti	on:					

#### Project Description:

Creation of "Self Help Knowledge Database" using eGain application (Web Based)



#### Project Role and Responsibilities:

Technical Coordinator and Infrastructure Impact Assessment (IIA) - Team Coordinator

- Made decisions/recommendations and set/influence technical directions in the projects
- Assisted project managers in project charter, project planning and execution of projects
- Identified and led appropriate technical teams concurrently
- Facilitated modeling sessions with business analysts and business partners
- Interfaced with consultants, vendors, Legal, Administrative services and System technology area on technical issues of the project.
- Opened, managed, and escalate issues within and across projects
- Assisted team members in identifying and resolving technical problems
- Coordinated the technical tasks within the implementation plan, such as connectivity and hardware deployment.
- Worked with the stakeholders and other projects/programs
- Identified technical areas that need to be involved and coordinated
- Monitored enterprise publications for announcements impacting the project
- Assisted in developing technical documentation of the projects (Detailed Technical System Design)
- Coordinated transition and Knowledge transfer from project resources to Service resources, help desk, command center and regional centers
- Closely coordinated with Project Managers, Sponsors and Stakeholders to resolve issues and to provide status report

		Key F	Personnel Re	ference	Form			
Key Personnel Name: Jim Peresta			Proposed Role:		ole: Certi	ication Lea	ad	
			Reference	ce 1				
Client Name:	Dept.	of Vermont – of VT Health ss (DVHA)	ealth Waterbury, VT 0567		•			
Contact Name:	Joe L	iscinsky	Contact Ti	itle:	MMIS Deputy Program Lead			
Contact Phone:	802-233-6212		Contact E	-mail:	Joseph.Liscinsky@Vermont.gov			gov
Project Name: Me Enterprise	oderniz	ation of the Verr	nont Medicaid		Start Date:	05/2017	End Date:	06/2018

#### **Project Description:**

Medicaid Enterprise strategic planning in defining and implementing modular MMIS solutions. Focusing on enhancing business processes and leveraging new and innovative technologies.



Project Role and Responsibilities: MMIS Program Manager - Supported the Design, Development and Implementation (DDI) activities of Vermont's Medicaid Enterprise System (MES). Particular focus on strategic planning for procurement of Medicaid modules (PBM, Care Management, Provider Management, Program Integrity, Business Intelligence, Operations Management (Claims Processing, PA, Reference). Oversaw development of statements of work, scope/priority definitions, project charters, PPU's, and the creation of budgets and schedules for large complex projects within the MMIS program.

		Reference 2				
Client Name:	Maryland Health Benefit Exchange	Client Address:	201 W. Preston Street, Baltimore, MD 21201			more, MD
Contact Name:	Allan Pack	Contact Title:	Principal Deputy Director, Health Services Cost Review Commission			
Contact Phone:	601-864-2922	Contact E-mail:	Allani.pack@maryland.gov			
Project Name: Maryland Health Benefit Exchange		Start Date:	08/2013	End Date:	10/2014	

**Project Description:** Design, Develop, Test, Implement Maryland's State-Based Health Benefit Exchange

**Project Role and Responsibilities: Senior Medicaid Program Advisor -** Collaborate with stakeholders of the MHBE, Maryland Dept. of Health and Mental Hygiene (DHMH), MD Department of Human Resources (DHR), and MD HIX IV & V staff to facilitate/resolve program design and development issues

- -Write PAPDs, IAPDs, IAPD-Us, and OAPDs to receive additional CMS funding for the MD HIX project
- -Establish risk management and issue management tracking system
- -Facilitate decisions across groups of diverse stakeholders, including directors and managers from multiple State agencies
- -Ensure project deliverables' completion and that they meet State HIX requirements
- -Ensure approved project deliverables and documentation are maintained in the SharePoint repository

		Reference 3				
Client Name:	Centers for Medicare and Medicaid Services	Client Address:	7500 Security Blvd., Baltimore, MD			
Contact Name:	John Allison	Contact Title:	Technical Director, Region IV			/
Contact Phone:	614-216-9298	Contact E-mail:	John.Allison@cms.hhs.gov			
Project Name: Implementation of the HITECH Program		Start Date:	11/2010	End Date:	08/2011	



**Project Description:** The Health Information Technology for Economic and Clinical Health Act (HITECH Act) is part of the American Recovery and Reinvestment Act of 2009 (ARRA). ... The HITECH Act was created to motivate the implementation of electronic health records (EHR) and supporting technology in the United States.

Project Role and Responsibilities: Medicaid Health IT Specialist - Review State Medicaid Health Information Technology Plans (SMHP's) and Implementation Advanced Planning Documents (IAPD's) from State Medicaid programs for completeness and accuracy to approve/deny requests for CMS funding for Electronic Healthcare Provider Incentive Payment program

- -Write impact analyses for State Medicaid programs to implement T-MSIS reporting requirements to CMS Provide updates and policy clarification by delivered presentations at various HI-TECH and MMIS conferences
- -Review/analysis of the MITA/HITECH crosswalk and MITA/HITECH business process alignment related to EHR provider incentive payment program
- -Analysis and input into the proposed MITA 3.0 Framework

		Key Pe	ersonnel Re	ference	Form			
Key Personnel N	ame:	Amy Henry		Proposed Role:			Quality Assurance Manager	
			Referen	ce 1				
Client Name:	State of Montana Department of Public Health and Human Services  Client Address:		7 W 6th Ave, Suite 2B Helena, MT 59601					
Contact Name:	Gene	Hermanson	Contact T	Contact Title:		ntana Program for Automating and nsforming Healthcare (MPATH) gram Director		
Contact Phone:	(406)	841-5021	Contact E	-mail:	ghermanson2@mt.gov			
Project Name:  Montana Program for Automating and Transforming Healthcare (MPATH) Data Analytics Population Health (DAPH)				Start Date:	03/201	End Date:	07/2023	

#### **Project Description:**

By implementing advanced population health data analytics, DPHHS will improve Medicaid outcomes through a comprehensive population health management program. It will enable the creation of comprehensive, actionable statistical profiles of health care delivery and utilization, which will allow the Department to create and optimize policies that benefit the entire ecosystem.



#### Project Role and Responsibilities:

As the PMO Lead/Quality Assurance Manager for the State of Montana contract, Ms. Henry is responsible for ensuring all business processes are followed, Quality Management plan was created and is maintained throughout the life of the contract, analysis of quality measures and making recommendations for any improvements and corrective actions are implemented and monitor, all quality metrics are reported on a monthly basis and training is conducted for all team members on the quality aspects of the project.

		Reference 2				
Client Name:	State of Montana Department of Public Health and Human Services	Client Address:	7 W 6th Ave, Suite 2B Helena, MT 59601  MPATH Project Manager, PMO			
Contact Name:	Shellie McCann	Contact Title:				
Contact Phone:	(406)841-5025	Contact E-mail:	RMcCann@mt.gov			_
Project Name:  Montana Program for Automating and Transforming Healthcare (MPATH) Data Analytics Population Health (DAPH)				03/2018	End Date:	07/2023

#### **Project Description:**

By implementing advanced population health data analytics, DPHHS will improve Medicaid outcomes through a comprehensive population health management program. It will enable the creation of comprehensive, actionable statistical profiles of health care delivery and utilization, which will allow the Department to create and optimize policies that benefit the entire ecosystem.

#### Project Role and Responsibilities:

As the PMO Lead/Quality Assurance Manager for State of Montana, Ms. Henry is responsible for ensuring all business processes are followed, Quality Management plan was created and is maintained throughout the life of the contract, analysis of quality measures and making recommendations for any improvements and corrective actions are implemented and monitor, all quality metrics are reported on a monthly basis and training is conducted for all team members on the quality aspects of the project. Ms. Henry and I work closely on all the deliverables for the project and Ms. Henry reviews and monitors all deliverables for completeness and met the standards set forth. Ms. Henry is engaged in the daily reviews of all project deliverables and artifacts.

		Reference 3				
Client Name:	Allscripts	Client Address:	s: 360 Interlocken Boulevard, Suite 300 Broomfield, CO 80021			Suite 300
Contact Name:	Patrick Doughtery	Contact Title:	AVP, Client Delivery Services			s
Contact Phone:	(303) 704-8865	Contact E-mail:	Patrick.Dougherty@allscripts.com			
Project Name: British Telecom (BT) UK Project – Choose and Book				03/2006	End Date:	12/2012



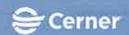
The BT UK Project Choose and Book project instrumental in Cerner going into a Global corporation. The BT UK Project Choose and Book was the first project implementing the Cerner Software in the Northern cluster of London. The Choose and Book functionality was implemented to allow registration of the national electronic referral into Cerner Millennium.

#### Project Role and Responsibilities:

As the Project Manager for BT UK Project – Choose and Book, Ms. Henry was responsible for management of the development roadmap, quality and testing of the functionality and deliverables, participating in the change management process and resource management. Ms. Henry had to learn understand the quality and regulatory compliance measure from the UK to ensure all was tested and the functionality was meeting the requirements. Ms. Henry had to communicate this over to the project team and ensure that design encompasses these. Ms. Henry would monitor the quality of the functionality and would participate in any process improvement and then monitor any correction action that were reviewed and improved. With Ms. Henry's assistance, the project was a success and laid the foundation for Cerner to continue to grow in the Global space.

#### **ASSUMPTIONS**

- Cerner assumes DHHR and CMS will approve the selected on-site facility one month post contract signing.
- Cerner assumes our on-site facility space will hold approximately 15 persons.



#### ATTACHMENT E: INITIAL WORK PLAN

Instructions: The Vendor should provide an Initial Work Plan and Work Breakdown Structure (WBS) by project phase and task group. Each task group is defined in Section 4.6: Project Task Groups and Deliverables of this RFP.

This Work Plan and WBS should show all task details with responsibilities, timelines, durations, milestone dates, deliverable dates, and Vendor personnel hours by deliverables for each project phase, State personnel hours by phase deliverable, and all critical dependencies for the project's milestones and deliverables. The Initial Work Plan should be provided as an attachment to the Vendor's Technical Proposal and tabbed as such in the submission. The Vendor should also provide an electronic version of the Microsoft Project® version in the Vendor's electronic submission of the Technical Proposal.

At a minimum, the Vendor's proposed Work Plan should include the following:

- Detailed tasks and timelines, outlining the major project phases planned by the Vendor. These should include, at a minimum, the timeline and tasks associated with full deployment of functionality
- The WBS
- The project schedule for all project deliverables and milestones
- Identification of resources assigned the responsibility for each deliverable within the WBS to the level at which control will be exercised
- Identification of deliverables that require a prompter State acceptance than described in the RFP, including the proposed acceptance period for the deliverable

#### **Deliverable Review and Acceptance Criteria**

DHHR intends to review all deliverables according to the process described below. The Vendor's quality management process should be followed in conformance with any review process specifically designed for this project. The review process allows DHHR and Vendor personnel to determine, at key project checkpoints, that the deliverable meets the specifications and is functional in the context of the solution.

Prior to drafting the deliverable, the Vendor meets with DHHR to establish an approved set of deliverable acceptance criteria. The project team uses these criteria during review of the deliverable to determine whether the deliverable meets all requirements.

- Prior to deliverable submission, the Vendor schedules a deliverable walkthrough with DHHR to provide a high-level review of the deliverable to-be submitted.
- The review process begins with submission of the deliverable. The date of receipt should be defined based on the time of submission. If the Vendor submits the deliverable before noon on a business day, that day should be the date of receipt. If the Vendor submits the deliverable after noon on a business day, the next business day should become the date of receipt. If a deliverable is submitted on a non-business day (such as a weekend or holiday), the next business day should become the date of receipt.



- DHHR will provide the Vendor with either a notice of deliverable approval, a notice
  of conditional approval, a notice of return, or a request for additional time to
  complete its review within ten (10) business days from the date of receipt of each
  deliverable. If any portion of the deliverable is unacceptable, DHHR should outline
  the reason for return of the deliverable in the notification.
- DHHR intends to provide the Vendor with five (5) business days from the date of return by DHHR to correct any deficiencies and resubmit the deliverable to DHHR.
- DHHR has an additional five (5) business days from the date the Vendor resubmits the deliverable to review it.
- If DHHR finds the deliverable acceptable, DHHR will provide the Vendor with written approval of the deliverable.
- If DHHR finds the deliverable or any portion thereof unacceptable, or not in alignment with the approved acceptance criteria, the State intends to reject the deliverable and escalate the issue using the approach defined in the approved Issue Management Plan.

In this section we include our Initial Work Plan and Work Breakdown Structure (WBS) in support of Section 4.6 Project Task Groups and Deliverables requirements, as well as how we will work with DHHR for review and acceptance of project deliverables.

#### Initial Work Plan Overview

Cerner's approach to planning all aspects of the project is based on a well-designed project workplan. We have created an Initial Work Plan in Microsoft Project<sup>®</sup>, which is the foundation for planning and coordinating project activities.

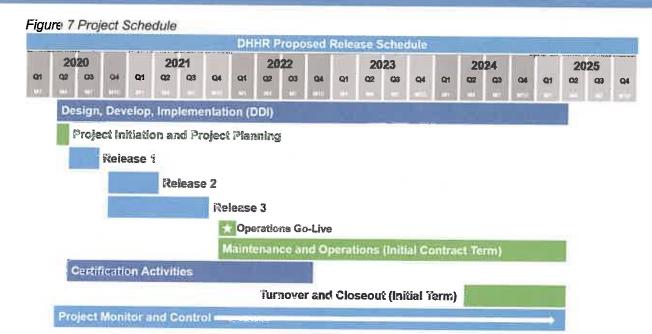
The DDI phase will include three key releases. In Release 1 (Takeover Value Proposition) we prioritize speed to value by supplying 1099 pre-built measures and nearly 17,000 concepts curated from 1.9M codes and roughly 200 standard terminologies. We ensure a successful takeover with a proven delivery methodology to support abbreviated release strategies.

In Release 2 (Clinical Integration Value Proposition) our experts apply their deep experience with non-claims data sources and establish connections of various data types in one centralized EDS. We establish the framework for proactive and predictive analytics to support better analysis of unique, complex, and vulnerable populations.

During Release 3 (Enterprise Development Value Proposition) we establish our modernized TMSIS solution geared towards data quality to help WV mitigate CMS Critical Issues. Our experience in supporting broader program advancement extends beyond traditional Medicaid and allows DHHR to provide improved Managed Care connection and oversight.

Staffing resource management will occur through all project phases. The following Project Schedule illustrates the relationship between the Medicaid Deployment Methodology (MDM) phases and the EDS project phases outlined by DHHR.





For the Initial Work Plan please refer to the draft *Initial Work Plan* document in Attachment L. Additional Attachments located in the technical proposal.

#### Work Breakdown Structure

Using this Initial Work Plan and a detailed Work Breakdown Structure, we manage the EDS project task dependencies and resource workloads to verify that the plan is closely monitored and tracked. The Work Breakdown Structure (WBS) is developed by project phase and task group, including task details with responsibilities, timelines, durations, milestone dates, deliverable dates. It includes Cerner hours by deliverables for each project phase, DHHR hours by phase deliverable, and all critical dependencies for the project's milestones and deliverables.



Figure	8	Work	Breakdown	Structure
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)	WBS	Vask Name	Work	Duration	Start	Finish !
0	-0	West Virginia DHHR - EDS Project	358,700 hrs	1244 days	Mon 5/4/20	Mon 5/5/25
1	1	Project Initiation and Project Planning	7,913 hrs	20 days	Mon 5/4/20	Tue 6/2/20
134		Design, Develop, Implementation (DDI)	104,637 hrs	359 days	Mon 6/1/20	Fri 11/5/21
135		DDI Release 1	25,237 hrs	112 days	Mon 6/1/20	Fri 11/6/20
	2.1.1	Solution Planning 1 (Design Strategy)	1,082 hrs	22 days	Mon 6/1/20	Tue 6/30/20
	~. 2.1.2	Solution Planning 2 (Design Confirmation)	1,210 hrs	22 days	Mon 6/8/20	Tue 7/7/20
	2.1.3	Solution Design, Testing and Operations 1 (Technical Configuration)	10 185 hrs	55 days	Mon 6/15/20	Fri 8/28/20
	2.1.4	Solution Design, Testing and Operations 2 (Cemer Testing)	4,000 hrs	25 days	Mon 7/27/20	Fri 8/28/20
	2.1.5	Solution Design, Testing and Operations 3 (DHHR Testing/UAT)	4,315 hrs	24 days	Mon 8/31/20	Fri 10/2/20
	2.1.6	Solution Deployment 1 (Prepare for Cutover)	975 hrs	10 days	Mon 9/28/20	Fri 10/9/20
	2.1.7	Solution Deployment 2 (Cutover to Production)	2 740 hrs	14 days	Tue 10/13/20	Fri 10/30/20
608	_	Solution Deployment 3 (Training)	730 hrs	18 days	Tue 10/13/20	Fri 11/6/20
	2.2	DDI Refease 2	26,830 hrs	122 days	Mon 11/9/20	Fri 5/7/21
	2.2.1	Solution Planning 1 (Design Strategy)	890 hrs	18 days	Mon 11/9/20	Mon 12/7/20
649	_;	Solution Planning 2 (Design Confirmation)	370 hrs	20 days	Mon 11/16/20	Tue 12/15/2
	2.2.3	Solution Design, Testing and Operations 1 (Technical Configuration)	11,830 hrs	55 days	Mon 11/30/20	Fri 2/19/21
	2.2.4	Solution Design, Testing and Operations 2 (Cemer Testing)	3,890 hrs	23 days	Tue 1/19/21	Fri 2/19/21
	2.2.5	Solution Design, Testing and Operations 3 (DHHR Testing/UAT)	4,020 hrs	24 days	Men 2/22/21	Thu 3/25/21
	2.2.6	Solution Deployment 1 (Prepare for Cutover)	755 hrs	15 days	Mon 3/22/21	Fri 4/9/21
	2.2.7	Solution Deployment 2 (Cutover to Production)	3,610 hrs	15 days	Mon 4/12/21	Fri 4/30/21
	2.2.8	Solution Deployment 3 (Training)	1,465 hrs	20 days	Mon 4/12/21	Frì 5/7/21
	2.3	DDI Retease 3	52,570 hrs	247 days	Mon 11/9/20	Fri 11/5/21
	2.3.1	Solution Planning 1 (Design Strategy)	2,070 hrs	18 days	Mon 11/9/20	Mon 12/7/20
	2.3.2	Solution Planning 2 (Design Confirmation)	420 hrs	18 days	Mon 11/30/20	Wed 12/23/2
	2.3.3	Solution Design, Testing and Operations 1 (Technical Configuration)	21,505 hrs	80 days	Mon 12/14/20	Fri 4/9/21
	2.3.4	Solution Design, Testing and Operations 2 (Cemer Testing)	10,810 hrs	58 days	Mon 4/12/21	Fri 7/2/21
	2.3.5	Solution Design, Testing and Operations 3 (DHHR Testing/UAT)	8,450 hrs	38 days	Mon 7/5/21	Wed 8/25/2
	7 2.3.6	Solution Deployment 1 (Prepare for Cutover)	1,130 hrs	19 days	Mon 8/23/21	Fri 9/17/21
	2.3.7	Solution Deployment 2 (Cutover to Production)	5 895 hrs	24 days	Mon 9/20/21	Frt 10/22/21
	4 2.3.B	Solution Deployment 3 (Training)	2,290 hrs	33 days	Mon 9/20/21	Fri 11/5/21
185		Project Monitor and Control	45,700 hrs	359 days	Mon 6/1/20	Fri 11/5/21
1869		Operations (Initial Contract Term)	200,450 hrs	1226 day	Mon 6/1/20	Mon 5/5/25

#### Deliverable Review and Approval

Cerner agrees to RFP section 4.6 Project Task Groups and Deliverables requirements. To meet deliverable requirements, we follow our Document Management Plan (DMP)/Document Management Methodology (DMM) process which is designed to ensure quality documentation is developed, reviewed and updated internally prior to submission. This documentation is designed to be readily reviewed and approved in a timely manner. The DMM review process will be documented in the DMP and include specific timelines that are mutually agreed to by DHHR and Cerner to be utilized for deliverable review cycles. During the review of each document, feedback is captured in a template helping to facilitate discussion and verify that each item is addressed in the next revision of the document to DHHR.

The process also includes the identification and planning of refinements via regular process improvement meetings between Cerner and DHHR. These feedback meetings identify continuous improvement opportunities for document development, maintenance, and quality. Cerner will work with DHHR to determine document formats and submit documents for review and approval by the Department prior to publication. Cerner will adhere to the process and



timelines established in the Project Management Plan (PMP), Quality Management Plan (QMP), and Project Work Plan (PWP).

Cerner's Project Management Office (PMO) will work with DHHR to align Cerner's standard process for deliverable management with any DHHR needs (e.g. file naming conventions, specific signature forms required) at project initiation. During this process, Cerner's PMO will also gather any templates or checklists DHHR wants to provide to ensure Cerner's deliverable process is consistent with the process across other vendors and modules.

Our project-specific documentation uses best practices related to the content, including standards from PMBOK® and CMS MECT and Cerner's internal guidelines and best practices. Walkthroughs will be conducted upon initial completion of deliverables. Cerner can schedule additional walkthroughs upon request.



#### Instructions for Completion of Attachment F - Mandatory Requirements

- The Vendor must note compliance with each mandatory requirement listed in the Vendor's Disposition column of Tab 3 -Mandatory Req & Responses, using only the values that appear in the drop-down list.
- 2. Vendor's Disposition values are outlined below:
  - 1. "Will Meet": Vendor agrees to the mandatory requirement.
  - 2. "Will Not Meet": Vendor declines to meet the mandatory requirement.
- 3. All mandatory requirements must contain one of the values identified above. Any mandatory requirement without a **Vendor's Disposition** response value will be considered to be "Will Not Meet."
- 4. If appropriate, the Vendor must provide the *Attachment*, *Section*, and *Page Number(s)* where their detailed narrative response for each mandatory requirement resides, providing the DHHR with a crosswalk, and ensuring that each mandatory requirement is addressed. Be advised that the *Attachment* column has been pre-populated with the location that the DHHR anticipates the narrative response to reside, however it is up to the Vendor to update that column accordingly should the Vendor respond to a mandatory requirement in a different location.



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		Tabs in this spreadsheet				
Worksheet Instructions	Instructions for comple	tion of this RFP supplement.				
2. Worksheet Information This tab including the information about the contents of this workbook.						
3. Mandatory Reg Responses		y requirements and all related data.				
4. Code Values	Contains coded values	for use in the mandatory requirements tab, and explanations as appropriate.				
		Columns on the specification Responses Tab				
Section	Column	Description	Corresponding Code Values			
	Req ID #	The unique ID of the mandatory requirement.	N/A			
Mandatory Requirements	Specification Text	The text of the mandatory requirement.	N/A			
Туре	N/A	How the specification is categorized in the RFP	N/A			
	Vendar's Disposition	Vendor is expected to indicate their compliance with the specification using one of the supplied values.	Vendor Response - Disposition			
Vendor Response Area	Attachment	Vendor is expected to provide a reference to the appropriate RFP attachment where more detailed information about the specification can be found. The expected attachment is identified for Vendor and State convenience.	Attachment			
	Section and Page Reference	Vendor is expected to provide a reference to the appropriate Section and Page Number within the specified Attachment where more detailed information about the mandatory requirement can be found.	N/A			



	Mondatory Requirements			Vendor Respo	rie	
Regitte	territation Inc.	Type	Vendoc's Esposition	Attacoment	3021011	President
MROOI :	The Vendor must provide facilities for the recovery of Design, Development, and Implementation (DDI) or operations activities in the event of a disaster that disrupts DDI or operations as described in the Vendor's Disaster Recovery and Business Continuity Management Plan which will be developed by the Vendor and approved by the Department. The Vendor must provide resources necessary to:  - Recover critical services in accordance with the Recovery Time Objective (RTO) and Recovery Point Objectives (RPO) to be approved by the Department and documented in the Disaster Recovery and Business Continuity Management Plan - Meet the approved Service Level Agreements listed in Appendix 5: Service Level Agreements & Performance Standards	Disaster Recovery Facility	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	141
MROO2	The Vendor must participate in the oral presentations to be scheduled during the proposal scoring period. The following proposed key staff must be present or orals in lieu of corporate or sales personnel being the primary participants.  - Account Manager - Project Manager - Business Lead	Orals	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Regulrements	141
	- Business Lead - Technical Lead - Implementation Manager - Operations Manager - Certification Lead - Quality Assurance Manager					
MR003	The Vendor must comply with all current and future security and privacy policies and procedures of the Department and the West Virginia Office of Technology (WVOT), which can be found at the following link:  http://www.wvdhhr.org/mis/policies.asp https://technology.wv.gov/security/Pages/policies-issued-by-the-cto.aspx	Security	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	141
MR004 .	The Vendor Technical Support Call Center, as described in Appendix 1: Detailed Specifications, must be located within the continental United States, as established in requirements related to handling of federal tax information (FTI) contained in Internal Revenue Service (IRS) Publication 1075, Section 5.3 Access to FTI via State Tax Files or through other agencies under the authority granted by United States Code \$6013(p)(4)(C)	Technical Support Call Center Location	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	142
MR005	The Vendor, all business partners, subcontractors, independent contractors, and other entities supporting the Vendor in delivery of the services defined in this contract must perform all work associated with this contract within the continental United States or U.S. Territories, as established in requirements related to handling of federal tax information (FII) contained in Internal Revenue Service (IRS) Publication 1075, Section 5.3 Access to FII via State Tax Files or Through Other Agencies under the authority granted by United States Code \$6013(p)(4)(C). At no time shall information governed by privacy laws and regulations be used, maintained, transmitted, or caused to be transmitted outside of the United States.	Locations	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	142
MR006	The Vendor must host the Enterprise Data Solution (EDS) and maintain a secure site(s) and secure secondary site(s) within the continental United States Off-site is defined as a physically separate location based on current industry best practices. These facilities must be located in the continental United States, as established in requirements related to handling of federal tax information (FTI) contained in Internal Revenue Service (IRS) Publication 1075, Section 5 3 Access to FTI via State Tax Files or Through Other Agencies under the authority granted by United States Code §6013(p)(4)(C)	Locations	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	143
MR007	The Vendor must be responsible for any lost Federal Medical Assistance Percentages (FMAP) due to system deficiencies or deficiencies noted during federal reviews. The Vendor will be responsible for only the portion of FMAP lost that is determined by the Department to be the fault of the Vendor. The Enterprise Data Solution (EDS) Vendor will not be responsible for certification requirements that are not included in the scope of this RFP.	FMAP	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	143
MR008	Prior to contract execution, the Department will conduct a review of all hardware, software, and communication components. The Vendor must ensure compatibility with the most current West Virginia Office of Technology (WVOT) supported versions and standards.	Compatibility	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	143

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	Mandatory Requirements			Vendor Respo.	ise:	
Sang SD H	Specification feat	± ypr	Vender's Disposition	Atticher	Section)	Fact #
MKUUS	The Vendor must agree to incorporate all applicable current and future coding standards and legislated or program necessary data requirements to ensure that the Enterprise Data Solution (EDS) is current in its ability to accept and appropriately employ new standards and requirements as they occur including, but not limited to: ICD-10, Health Insurance Portability and Accountability Act (HIPAA) v5010, the Patient Protection and Affordable Care Act (PPACA) and the Health Information Technology for Economic and Clinical Health Act (HITECH).	Compatibility	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	144
MR010	The solution must maintain full Health Insurance Portability and Accountability Act (HIPAA) compliance throughout the life of the contract at no additional cost to the Department	HIPAA	Will Meet	Attachment F - Mandatory Requirements	Attachment F Mandatory Requirements	144
MR011	The Vendor must comply with the baseline security controls for moderate impact information systems as recommended by the National Institute of Standards and Technology (NIST), Code of Federal Regulations, and CMS.	Federal Security Requirements	Will Meet	Attachment F - Mandatory Requirements		144
MR012	The Vendor must adhere to and support all security, risks, standards, policies, and procedures of the Department, State, and the WVOT, which can be found at the following link http://www.wvdhhr.org/mis/policies.asp https://technology.wv.gov/security/Pages/policies-issued-by-the-cto.aspx	State Security Requirements	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	145
MRO13	The Vendor must agree to incorporate all requirements mandated through federal and State regulations and legislation, including new reporting requirements. The Vendor must ensure that the Enterprise Data Solution (EDS) is current in its ability to accept and employ new standards and requirements as they occur. Formalized change control will be used for all such changes, during all phases of the project as defined in the Change Management Plan.	Federal and State Regulatory Changes	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	145
MR014	The Vendor must provide right of access to systems, source code, and facilities to the Department or its designee and federal personnel to conduct audits and inspections. The Vendor must provide access to data, systems, and documentation required by auditors and inspectors	Right of Access	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	145
MR015	The Vendor will operate the Enterprise Data Solution (EDS), perform all functions described in the RFP, and continue all operations from the date of acceptance of each release until each function is turned over to a successor at the end of the contract, including any optional additional periods or extensions.	Turnover and Closeout Operations	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	146
MR016	The Vendor must perform according to approved Service Level Agreements (SLAs) and identified Key Performance Indicators (KPIs) with associated metrics in the areas listed in Appendix 5. Service Level Agreements & Performance Standards	Compliance with Service Level Agreements	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	146
MR017	The Vendor must deduct any amount due from future payments if the agreed upon SLAs are not met. The Department reserves the right to seek any other remedies under the Contract.	Compliance with Service Level Agreements	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	146
MR018	The Vendor must use industry-standard professional project management standards, methodologies, and processes to ensure the project is delivered on time, within scope, within budget, and in accordance with the Department's quality expectations. The Department utilizes the Project Management institute (PMI) PMBOK methodology.	Project Management	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	147
MR019	The Vendor must provide project status information to the Department and the Enterprise Data Solution (EDS) Project Management Office (PMO) within the required timeframes and in the agreed-upon format, as defined in the approved Project Management Plan.	Status Reporting	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	147
MR020	The Vendor must update deliverables at the request of the Department to align with changes in approach or methodology, or to include new or updated information that was not available at the time the deliverable was initially submitted and approved.	Deliverable Updates	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	144
MRO21	The Vendor must submit updated deliverables for Department approval based on the Project Schedule approved by the Department.	Deliverable Updates	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	148
MRO22	The Vendor must submit substantive changes to deliverables identified in Appendix 2. Deliverables and Milestones Dictionary to the Department for review and approval within thirty (30) calendar days of the proposed change	Deliverable Updates	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	in the
MR023	The Vendor must provide compliance support services to include providing up-to-date, accurate, and thorough documentation and reporting for regulatory and State compliance auditing.	Audit Compliance Support and	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	144



	Mandatory Requirements			Vendor Respo	nse.	
ng Hog	Specification Test	Type))	Vendin a Disposition	Attachment	Section	Facult
ARO24	The Vendor must provide a report outlining applicable NIST SP 600-55 security control responsibilities noting which security controls are inherited by the Vendor, implemented by the Department, or shared by both parties. This report must be maintained by the Vendor and outline the following  - Non-compliant and required security controls  - Applied mitigations  - Plan to correct deficiencies  - Cyber security procedures and management plans	Security Compliance	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory - Requirements	14
ARO25	The Vendor must coordinate with the Department to develop Centers for Medicare & Medicaid Services (CMS) Certification Checklist documentation for each Medicald Enterprise Certification (MECT) Checklist the Department Identifies as required for CMS certification of the EDS. Refer to the following link for more Information: https://www.medicaid.gov/medicaid/data-and-systems/mect/index.html	CMS Certification	Will Meet	Attachment F - Mandatory Requirements	Mandatory	149
VIRO26	The Vendor must coordinate with the Department to develop Centers for Medicare & Medicaid Services (CMS) Certification checklists documentation evidence for all Medicaid Enterprise Certification Toolkit (MECT) criteria related to the Enterprise Data Solution (EDS) and be prepared to work from current and future releases of the MECT to ensure compliance to CMS Certification guidance and processes including, but not limited to, artifacts and deliverables described in Appendix B — Required Artifacts List of the MECT. Refer to https://www.medicaid.gov/medicaid/data-and-systems/mect/index.html	CMS Certification	Will Meet	Attachment F - Mandatory Requirements	Requirements Attachment F - Mandatory Requirements	150
MR027	The Vendor must design the Enterprise Data Solution (EDS) to support the Medicald Information Technology Architecture (MITA) goals for the State as defined in the State's MITA State Self-Assessment (SS-A) and other West Virginia MITA Artifacts provided in the Procurement Library.	MITA Alignment	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory	150
VIRC28	The Vendor must agree that the Department retains ownership of all data, procedures, applications, licenses, and all materials developed during design, development, and implementation (DDI), and Operations, as well as the licensing for installed Commercial-off-the-shelf (COTS) software in alignment with 45 CFR §95 615 and 45 CFR §95 617. Manufacturers' support and maintenance for the COTS software licensing subsequent to the raitial install must be provided only for the life of the contract. The Department will not issue change orders related to software cost increases.	State Ownership (45 CFR §95.615 and 45 CFR §95.617)	Will Meet	Attachment F - Mandatory Requirements	Requirements Attachment F - Mandatory Requirements	150
WR029	The Vendor must place the source code in a third-party escrow arrangement with a designated escrow agent who is acceptable to the Department, and who shall be directed to release the deposited source code in accordance with a standard escrow agreement approved by the Department. That agreement must, at minimum, provide for release of the source code to the Department when:  a) The Vendor notifies the Department that support or maintenance of the Product will no longer be available  b) if the Vendor fails to provide services pursuant to this contract for a continuous period  c) individual(s) from the Department have directed the escrow agent to release the deposited source code in accordance with the terms of escrow  Source code, as well as any corrections or enhancements to such source code, shall be updated for each new release of the product within skty calendar  days of being made available in the production environment. The Escrow agent upon commencement of the contract term and shall certify annually that the  escrow remains in effect and in compliance with the contract. The Vendor shall be responsible for all costs associated with the third-party escrow  arrangement. The Vendor shall document the escrow management approach in the Configuration Management Plan.  The Vendor also must place in escrow one (1) paper copy and one (1) electronic copy of all maintenance manuals and additional documentation that are  required for the proper maintenance of the software used to develop, test, and implement the Enterprise Data Solution (EDS). Revised copies of manuals  and documentation must be placed in the escrow account within sixty calendar days of approval by the State. Such documentation must be the same  documentation as that which the Vendor supplies to its maintenance personnel to maintain its software.  When source code is provided, it must be provided in the language in which it was written and will include commentary that will allow a competent  programmer proficient in the source language to readily inte	Escrow	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	15
MIRO3O	The Vendor must ensure that all applications inclusive of Internet, intranet and extranet applications associated with this contract are compilant with Section 508 of the Rehabilitation Act of 1973, as amended by 29 U.S.C. §794d, and 36 Code of Federal Regulation (CFR) 1194:21 and 36 CFR 1194:22	Compliance with Rehabilitation Act of 1973	Will Meet	Attachment F - Mandatory Requirements	Attachment F Mandatory Requirements	15.
MRO31	The Vendor must ensure that data entered, maintained, or generated to meet the requirements of this Request for Proposal (RFP) is retained and/or accessible according to the federal requirements in 45 CFR Part 75 and/or applicable State and/or federal requirements.	Data Retention and Accessibility	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	153

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	Mandatory Requirements			Vendor Respo	nse	
kiq iD T	Specification Text	Type	Vendor's Gisposition	Attactoment	Section	Fage
MR032	The Vendor must obtain approval from the Department for all key staff hired under the contract and all personner assigned to the West Virginia Niedicard Enterprise Data Solution (EDS) Project. In all circumstances, key staff shall be replaced only with persons of equal or greater experience and qualifications	Starring	win Meet.	Attachment F - Manuatory Requirements	Attachment F - Mandatory Requirements	, <b>15</b>
MR033	Key Staff assigned to the project must be employed on full-time basis and required to be onsite. Onsite is defined as being in the Charleston, West Virginia-based facility between Monday and Friday from 8:00 a.m. Eastern Time to 5:00 p.m. Eastern Time. On-site time excludes the time required to travel to from the Charleston, West Virginia facility. Each Key Staff role is a full-time position, to be filled by one staff member only. Key Staff roles may not be combined or filled by multiple staff members. All Key Staff members will enter the project within 30 calendar days of the contract award. The Vendor should propose the onsite key staff and ensure how the offsite staff will fulfill project requirements as defined within this RFP.	Staffing	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	15
VIRO34	The Vendor must provide the Department a minimum of 10 business days' notice for staffing changes	Staffing	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory	15
- Ki				Requirements	Requirements	
MR035	The Vendor must replace key staff within 30 business days after the position is vacant, unless a longer period is approved by the Department.	Staffing	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	15
WR036	The Department has an interest in ensuring that its operations are carried out in an efficient, professional, legal, and secure manner. The Vendor must remove any staff involved in the project, if the Department determines that any such staff has or may interfere with the Department's interests identified above.	Staffing	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	15.
WR037	The Vendor must accept financial, legal, ethical, and all other forms of responsibility for the conduct of all business partners, independent contractors, subcontractors, and other entities supporting the Vendor or working with Vendor on the project.	Staffing	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	15
WR038	As a corrective action, the Vendor must provide increased staffing levels if requirements, timelines, quality, or other standards are not being met, based solely on the discretion of, and without additional cost to, the Department In making this determination, the Department will evaluate whether the Vendor is meeting deliverable dates, producing quality materials, consistently maintaining high quality, and meeting request for proposal (RFP) and contract standards without significant rework or revision.	Staffing	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	15.
MR039	The Vendor staff must not have the capability to access, edit, and share personal information data, including but not limited to Protected Health Information (PHI), Personally Identifiable Information (PII), Financial Transaction Information (FTI), and Social Security Administration (SSA) data (including but not limited to family, friends, and acquaintance information) with unauthorized users.	Viewing Human Services Program Information	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	15
WR040	The Vendor must ensure that all project staff have completed a Department Office of Management Info mation Services (OMIS) Vendor Employee Confidentiality Statement (VECS) before beginning work on the project	West Virginia Department of Health and Human Resources (DHHR) OMIS Vendor Employee Confidentiality	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	15
MRO41	The Vendor must comply with Federal Executive Order 11246 related to Equal Employment Opportunity, the Clean Air Act, and the Clean Water Act.	Statement (VECS) Equal Employment Opportunity, Clean Air Act, and Clean Water Act	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	15
VIRO42	The Vendor must provide a drug free workplace, and individuals shall not engage in the unlawful manufacture, distribution, dispensation, possession,	Drug Free	Will Meet	Attachment F - Mandatory	Attachment F -	· · 15
Harry Fred Control	abuse; or use of a controlled substance in the performance of the contract	Workplace Act of 1988		Requirements	Mandatory Requirements	The second second
VIR043	The Vendor must designate one named individual in their proposal as the Vendor organization's Health Insurance Portability and Accountability Act of 1996 (HIPAA) compliance officer.	HIPAA Compliance Officer	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Regulrements	15
MRO44	The Vendor may not publish or copyright any data using the Department's name without prior written approval by the Department for every instance in this context, "data" shall mean all results, technical information and materials developed and/or obtained in the performance of the services hereunder, including but not limited to: all reports, surveys, plans, charts, recordings (video and/or sound), pictures, drawings, analyses, graphic representations, computer programs and printouts, notes and memoranda, and documents whether finished or unfinished, which result from or are prepared in connection with the services performed hereunder. Except with respect to any commercial software, the Department will be and remain the owner of all data provided to the Department by the Vendor or its agents, subcontractors, or representatives pursuant to the contract other than the Vendor's internal administrative procedure records.	Publication and Copyright of State Data	Will Meet [g]	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	15
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Helt (D.H.	Mandatory Requirements			Vendor Respe	rese	
VIRD45	The Vender must a	Type	Whitin's proposition	#trac-metit	terripe	Page.tt:
	The Vendor must assume sortware and hardware licensing costs related to the legacy and modern solutions beginning upon execution of this contract and extending through completion of the contract. As each existing software and hardware license expires, the Vendor will renew the necessary licensing as agreed upon with the Department. It is the Department's intent to transfer allowable licenses. However, on a license-by-ficense basis, the Vendor should obtain the licenses necessary to operate the solution as existing licenses expire.  Current Department license costs shall be used for reference only. The Vendor must not assume that the current Department cost is the lowest cost. The Vendor must assume the license cost for which the Vendor can acquire the license.	Software and Hardware Licensing Costs	Will Meet	Attachment F - Mandatory Requirements		I.
MR046	The Vendor must procure the necessary licenses required to support its modernized solution. The Vendor is responsible for all licenses required at project initiation and can procure licenses as needed throughout the project, with no additional cost to the Department.	Software and Hardware Licensing	Will Meet	Attachment F - Mandatory		15
VIRO47	The Vendor must assume that only 50 concurrent Department licenses are required for the User Acceptance Testing (UAT) Environment, and that only 50 concurrent Department licenses are required for the User Acceptance Testing (UAT) Environment, and that only 50 concurrent Department licenses are required for the User Acceptance Testing (UAT) Environment, and that only 50 concurrent Department licenses are required for the User Acceptance Testing (UAT) Environment, and that only 50 concurrent Department licenses are required for the User Acceptance Testing (UAT) Environment, and that only 50 concurrent Department licenses are required for the User Acceptance Testing (UAT) Environment, and that only 50 concurrent Department licenses are required for the User Acceptance Testing (UAT) Environment, and that only 50 concurrent Department licenses are required for the User Acceptance Testing (UAT) Environment, and that only 50 concurrent Department licenses are required for the User Acceptance Testing (UAT) Environment, and that only 50 concurrent Department licenses are required for the User Acceptance Testing (UAT) Environment, and that only 50 concurrent licenses are required for the User Acceptance Testing (UAT) Environment (UAT) Environme	Costs Software and	Will Meet	Requirements  Attachment F - Mandatory	Mandatory Requirements	
VIR048	statement of the control of the cont	Hardware Licensing Costs		Requirements	Attachment F - Mandatory	15
	The Vendor must be responsible for all costs associated with solution updates or enhancements that are within the scope of the RFP	Software and Hardware Licensing Costs	Will Meet	Attachment F - Mandatory Requirements	Requirements Attachment F - Mandatory	15
VIR049	Vendors proposing commercial off-the-shelf (COTS) components must develop all documentation necessary to support the receipt of federal match related to the implementation of the component, upon request by the Department.	COTS Waiver Documentation	Will Meet	Attachment F - Mandatory Requirements	Requirements Attachment F - Mandatory	15
VIRO50	The Vendor must comply with 45 CFR 95 617 Software and ownership rights	Federal Royalty- Free Rights to Use Software or Documentation	Will Meet	Attachment F - Mandatory Requirements	Requirements Attachment F - Mandatory Requirements	15
/IR051	The Vendor must provide a software and hardware solution that is upgradeable and expandable to meet the Department's current and future needs.	Adaptability to Current and Future	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory	15
/R052	The Vendor must adhere to the approved Change Management Plan and definitions of modifications and enhancements provided in Request for Proposal (RFP)	Needs Adaptability to Current and Future	Will Meet	Attachment F - Mandatory Requirements	Requirements Attachment F -	15
/R053	The Vendor must be responsible for all expenses required to obtain and maintain access to the Department systems. Such expenses include, but are not limited to, hardware, software, network infrastructure, and any licensing costs.	Needs Cost of Maintaining	Will Meet	Attachment F - Mandatory	Mandatory Requirements Attachment F -	15
/IRC54		Access to State Systems		Requirements	Mandatory Requirements	-
	The Vendor must be responsible for all costs required for Department staff to access the solution. Such expenses include, but are not limited to, hardware and software necessary to support the solution.	Federal Risk and Authorization Management Program (FedRAMP) Certification	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	158
/IRO55	The Vendor must be fully responsible for all ongoing security monitoring of the solution for the life of the contract (or until such time that the Department and the Vendor come to an agreement to take a different approach to security monitoring), as described in the Security Requirements contained in the Business and Technical Requirements Appendix 1: Detailed Specifications of the RFP, Independent of any other audits and inspections that take place.	Responsibility for Ongoing Security Monitoring	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	158
1R056	The Vendor must make available to the Department, the results of any third-party audit conducted, including, but not limited to the Service Organization Control (SOC) 2, on the Vendor's organization services within the scope of this contract	Third Party Audit	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory	158
IR057	The Vendor must provide Department stakeholders access to conference space at the Vendor's site with accommodations for twenty participants at a minimum. The conference space must be furnished with standard conference room furniture, and equipped to support the design development and implementation (DDI) review, planning, testing, and training sessions required of the Vendor. The conference space must have a computer and projector for displaying presentations and supporting presentation material, and a high-quality speakerphone, with extendable microphones, to allow multiple remote staff to attend meetings by telephone. Conference space must also accommodate video conferencing and web-based application sharing for attendees.	Facility	Will Meet	Attachment F - Mandatory Requirements	Requirements Attachment F - Mandatory Requirements	158

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	Mandatory Requirements		Vendor Response				
tog ICI t	Specification Test	Type	Vendor's Disposition	Ayustimum:	Fertier)	P398.11	
MR058	The Vendor must acquire and maintain office-space (henceforth, "Vendor Facility") available 24 hours per day, during 365 days of the year, including all holidays, to support contracted services. The Vendor Facility must be staffed with employees hired specifically to support the scope of services in this Request for Proposal (RFP). In addition, the Vendor Facility must be located in Charleston, West Virginia within five (5) miles of the Office of Management Information Services (OMIS) Office, located at One Days Square, Charleston, West Virginia. All key staff members proposed in this RFP for both implementation and maintenance and operations must be located at the Vendor Facility.	Facility	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	158	
	Included in the space shall be a minimum of two (2) private offices for Department staff, a reception area, a security barrier isolating the public entrance and reception area from the rest of the facility, and restroom facilities. The site will provide space for project team meetings and work sessions.						
	The Vendor must assume all costs related to securing and maintaining the facility for the duration of the contract including but not limited to, hardware and software acquisition necessary to maintain approved service level agreements (SLAs) throughout the life of the contract, maintenance, lease hold improvements, utilities, office equipment, supplies, janitorial services, security, storage, transportation, and insurance.	Tr.					
					•		
MR059	The Vendor must obtain prior written approval from the State for the proposed layout of the facility, including specifications relating to location, space, leasehold improvements, and support equipment prior to execution of the office lease.	Facility	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	159	
	The Vendor must seek and obtain the State's prior written approval for any relocation Vendor Facility at, from or through which the services are provided and shall mitigate any impact to the State.					450	
MR060	The Vendor must be responsible for all costs related to the rental and operation of such facility, including, but not limited to leasehold improvements, utilities, a minimum 100 megabyte per second (mbps) connection, office and building security, telephones with voice mail and caller ID, a toll-free line for the Help Desk telephones with roll over and messaging, office equipment (two fax machines and a networked color copier and scanner), general office	Facility	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	159	
	supplies, storage, janitorial services and supplies, and any necessary facility insurance			A Comment			
MR061	The Vendor must ensure that Department staff office space in the Vendor's Charleston facility can be individually locked. This office space must be fully equipped with furniture; telephone service, a minimum 100 megabytes per second (mbps) connection to the internet, and access to a color printer and copier. The following reserved or paid parking spaces must be provided to accommodate designated Department staff: two Department parking spaces and five general visitor parking spaces.	Facility	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	159	
MRO62	The Vendor must provide authorization from a parent, affiliate, or subsidiary organization for the State to have access to its records if such a relationship exists that impacts to the Vendor's performance under the proposed contract	CMS RFP Checklist	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	159	
MRO63	The Vendor must supply documentation of components and procedures such that the solution could be operated by a variety of contractors or other users for any systems and modules developed, installed, or improved with ninety (90) percent federal funding participation (FFP) match.	CMS RFP Checklist	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	159	
MR064	The Vendor must work with the State to define, integrate, and maintain all data sources deemed necessary to the Enterprise Data Solution (EDS). This includes those data sources identified throughout implementation and maintenance and operation	Adaptability to Current and Future Needs	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	159	
MR065	The Director reserves the right to require any Vendor that files a protest of an award to submit a litigation bond in the amount equal to one percent of the lowest bid submitted or \$5,000, whichever is greater. The entire amount of the bond shall be forfeited if the hearing officer determines that the protest was filed for frivolous or improper purpose, including but not limited to, the purpose of harassing, causing unnecessary delay, or needless expense for the Agency. All litigation bonds shall be made payable to the Purchasing Division. In lieu of a bond, the protester may submit a cashier's check or certified checks will be deposited with and held by the State Treasurer's office. If it is determined that the protest has not been filed for frivolous or Improper purpose, the bond or deposit shall be returned in its entirety.	Litigation Bond	Will Meet	Attachment F - Mandatory Requirements	Attachment F - Mandatory Requirements	160	



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#### Vendor's should not edit this worksheet.

Vendor Response - Disposition					
Vendor's Disposition	Description				
Will Meet	Mandatory requirement will be met by the Vendor				
Will Not Meet	Mandatory requirement will not be met by the Vendor				

	Attochments
Response Template	Description
Attachment A	Cost Proposal
Attachment B	Title Page, Executive Summary, and Subcontractor Letters
Attachment C	Vendor Qualifications and Experience
Attachment D	Project Organization and Staffing Approach
Attachment E	Initial Work Plan
Attachment F	Mandatory Requirements
Attachment G	Business Specifications Approach
Attachment H	Technical Specifications Approach
Attachment I	Implementation Specifications Approach
Attachment J	Maintenance and Operations Specifications Approach
Attachment K	Terms and Conditions Response Template



Per the instructions located in tab 1. Worksheet Instructions of RFP # CRFP 0511 HHR20000001, Attachment F – Mandatory Requirements, we have provided a narrative description of Cerner's approach to the Mandatory Requirements found in tab 3. Mandatory Req & Responses of the same file on the following pages.

#### MR001

The Vendor must provide facilities for the recovery of Design, Development, and Implementation (DDI) or operations activities in the event of a disaster that disrupts DDI or operations as described in the Vendor's Disaster Recovery and Business Continuity Management Plan which will be developed by the Vendor and approved by the Department. The Vendor must provide resources necessary to:

- Recover critical services in accordance with the Recovery Time Objective (RTO) and Recovery Point Objectives (RPO) to be approved by the Department and documented in the Disaster Recovery and Business Continuity Management Plan
- Meet the approved Service Level Agreements listed in Appendix 5: Service Level Agreements & Performance Standards

The HealtheIntent Platform is delivered from multiple AWS Availability Zones (AZs). Each of these AZs has core infrastructure services and equipment, including; telecommunications, power, hardware, and security infrastructure in place. In the event of a disaster, surviving AZs will carry the load from a failed AZ. Cerner's emergency response team can also be mobilized to remediate a failed AZ service. In case of disaster, Cerner will apply all available efforts to recover systems as quickly as possible. Cerner offers a Recovery Time Objective (RTO) of no more than 48 hours for recovery of the production Platform and a Recovery Point Objective (RPO) of 24 hours of the production Platform.

#### MR002

The Vendor must participate in the oral presentations to be scheduled during the proposal scoring period. The following proposed key staff must be present for orals in lieu of corporate or sales personnel being the primary participants.

- Account Manager
- Project Manager
- Business Lead
- Technical Lead
- Implementation Manager
- Operations Manager
- Certification Lead
- Quality Assurance Manager

Cerner agrees to meet this requirement and will make our key staff available for oral presentations. We look forward to the opportunity to discuss the project with you and introduce you to our primary implementation team.

#### MR003

The Vendor must comply with all current and future security and privacy policies and procedures of the Department and the West Virginia Office of Technology (WVOT), which can be found at the following link: http://www.wvdhhr.org/mis/policies.asp https://technology.wv.gov/security/Pages/policies-issued-by-the-cto.aspx

Cerner has comprehensive security and privacy policies and procedures, as outlined at www.cerner.com/security, to meet the security and privacy needs of all of our clients. We look forward to discussing during contract negotiations how our foundational policies maintain a secure, consistent environment that align with the State's goals. Our policies are based on guidance from HIPAA, NIST 800-53, NIST CSF and ISO® 27001 standards and frameworks, and an overview is available at Cerner.com/Security. Additionally, the State may view Cerner's security policies and procedures, excluding any that may risk Cerner's ability to main the privacy



and security of the environment if released, as determined by Cerner in its sole but reasonable discretion.

#### MR004

The Vendor Technical Support Call Center, as described in Appendix 1: Detailed Specifications, must be located within the continental United States, as established in requirements related to handling of federal tax information (FTI) contained in Internal Revenue Service (IRS) Publication 1075, Section 5.3 Access to FTI via State Tax Files or through other agencies under the authority granted by United States Code §6013(p)(4)(C).

Cerner does not anticipate receiving federal tax information (FTI) pursuant to the state's response to question Q189 submitted as part of this RFP. In the event Cerner is required to receive FTI data, Cerner agrees to work in good faith with the state using commercially reasonable efforts to achieve compliance with the applicable IRS publication 1075 requirements.

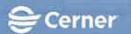
While we do not anticipate receiving FTI, we do have some engineering and support teams located outside of the United States. We use offshore resources to provide 24/7 "follow the sun" support for our applications. We reserve the right to utilize the best associate to resolve issues, no matter the physical location of that associate. No state data shall be stored or hosted outside the United States without the written consent of the state. Contractor may provide temporary access to data outside the United States for its personnel, subcontractors or agents solely as necessary to perform the Services under the Agreement, provided that if data is so accessed outside the United States, Contractor shall require that its personnel, subcontractors and agents comply with the requirements of the Agreement, including the Business Associate Agreement (BAA), concerning the protection of the confidentiality and security of the data.

#### MR005

The Vendor, all business partners, subcontractors, independent contractors, and other entities supporting the Vendor in delivery of the services defined in this contract must perform all work associated with this contract within the continental United States or U.S. Territories, as established in requirements related to handling of federal tax information (FTI) contained in Internal Revenue Service (MR005) Publication 1075, Section 5.3 Access to FTI via State Tax Files or Through Other Agencies under the authority granted by United States Code §6013(p)(4)(C). At no time shall information governed by privacy laws and regulations be used, maintained, transmitted, or caused to be transmitted outside of the United States.

Cerner does not anticipate receiving FTI pursuant to the state's response to question Q189 submitted as part of this RFP. In the event Cerner is required to receive FTI data, Cerner agrees to work in good faith with the state using commercially reasonable efforts to achieve compliance with the applicable IRS publication 1075 requirements.

While we do not anticipate receiving FTI, we do have some engineering and support teams located outside of the United States. We use offshore resources to provide 24/7 "follow the sun" support for our applications. We reserve the right to utilize the best associate to resolve issues, no matter the physical location of that associate. No state data shall be stored or hosted outside the United States without the written consent of the state. Contractor may provide temporary access to Data outside the United States for its personnel, subcontractors or agents solely as necessary to perform the Services under the Agreement, provided that if data is so accessed outside the United States, Contractor shall require that its personnel, subcontractors and agents comply with the requirements of the Agreement (including the BAA) concerning the protection of the confidentiality and security of the data.



The Vendor must host the Enterprise Data Solution (EDS) and maintain a secure site(s) and secure secondary site(s) within the continental United States. Off-site is defined as a physically separate location based on current industry best practices. These facilities must be located in the continental United States, as established in requirements related to handling of federal tax information (FTI) contained in Internal Revenue Service (IRS) Publication 1075, Section 5.3 Access to FTI via State Tax Files or Through Other Agencies under the authority granted by United States Code §6013(p)(4)(C).

Cerner does not anticipate receiving FTI pursuant to the State's response to question Q189 submitted as part of this RFP. In the event Cerner is required to receive FTI data, Cerner agrees to work in good faith with the state using commercially reasonable efforts to achieve compliance with the applicable IRS publication 1075 requirements. Cerner agrees to host and maintain your Enterprise Data Solution (EDS) at a site within the continental United States. All hosting sites adhere to current industry best practices.

While we do not anticipate receiving FTI, we do have some engineering and support teams located outside of the United States. We use offshore resources to provide 24/7 "follow the sun" support for our applications. We reserve the right to utilize the best associate to resolve issues, no matter the physical location of that associate. No state data shall be stored or hosted outside the United States without the written consent of the state. Contractor may provide temporary access to data outside the United States for its personnel, subcontractors or agents solely as necessary to perform the Services under the Agreement, provided that if data is so accessed outside the United States, Contractor shall require that its personnel, subcontractors and agents comply with the requirements of the Agreement (including the BAA) concerning the protection of the confidentiality and security of the data.

#### MR007

The Vendor must be responsible for any lost Federal Medical Assistance Percentages (FMAP) due to system deficiencies or deficiencies noted during federal reviews. The Vendor will be responsible for only the portion of FMAP lost that is determined by the Department to be the fault of the Vendor. The Enterprise Data Solution (EDS) Vendor will not be responsible for certification requirements that are not included in the scope of this RFP.

Cerner agrees to work in good faith with the State to achieve certification.

#### MR008

Prior to contract execution, the Department will conduct a review of all hardware, software, and communication components. The Vendor must ensure compatibility with the most current West Virginia Office of Technology (WVOT) supported versions and standards.

As a SaaS offering, the supporting platform is managed completely by the Vendor and thus, there are no hardware, software versioning or compatibility requirements necessary for WVOT to obtain, review or meet. Additionally, Cerner's HealtheIntent Platform, technology infrastructure is located within an AWS data center, using infrastructure as a service (laaS). Since Cerner uses both a SaaS and laaS in our delivery model, we provide a combination of physical and virtual access to appropriate system applications specific to the Department's requirements.

Cerner has minimal compatibility requirements, the HealtheIntent Platform's applications are accessed via the web (internet connection provided by WVOT) using standard browsers, such as Chrome®, Firefox®, Internet Explorer®, and Safari®. Advanced users will have the option of installing Tableau Desktop and other desktop applications to facilitate API's to support additional advanced workflows.



The Vendor must agree to incorporate all applicable current and future coding standards and legislated or program necessary data requirements to ensure that the Enterprise Data Solution (EDS) is current in its ability to accept and appropriately employ new standards and requirements as they occur including, but not limited to: ICD-10, Health Insurance Portability and Accountability Act (HIPAA) v5010, the Patient Protection and Affordable Care Act (PPACA) and the Health Information Technology for Economic and Clinical Health Act (HITECH).

Cerner provides operations support, maintenance, and ongoing configuration of the HealtheIntent Platform throughout the life of the contract. This includes operations support as described in the scope of work and delivery of maintenance and enhancement services. As the DHHR program changes with new laws, regulations, industry standards, healthcare reference data (e.g. ANSI X12 v5010, HIPAA, HEDIS, HCPCS, and ICD-10) and updated program policies. Cerner's staff knowledge and experience are best in breed when it comes to reference data for reporting.

Cerner has established and maintains the necessary controls required for compliance with HIPAA (as amended by HITECH). HIPAA (internal or external) assessments take place on an annual basis and examine all appropriate corporate and client environments.

# MR010 The solution must maintain full Health Insurance Portability and Accountability Act (HIPAA) compliance throughout the life of the contract at no additional cost to the Department.

Cerner has built its enterprise data warehouse & analytics platform, HealtheIntent, to meet HIPAA information security requirements. Cerner will enter a BAA with DHHR that defines the HIPAA responsibilities to which Cerner will comply. Cerner maintains compliance with HIPAA Privacy Rule described at 45 CFR Part 160 and Part 164, Subparts A and E & the HIPAA Security Rule at 45 CFR Part 160 and Part 164, Subparts A and C. Cerner acknowledges that enactment of the HITECH Act, as implemented by the Final Rule, amended certain provisions of HIPAA in ways that now directly regulate, or will on future dates directly regulate, Cerner under the Privacy Rule and the Security Rule. Cerner agrees, as of the compliance date of the Final Rule, to comply with applicable requirements imposed under the Final Rule. HIPAA compliance will be maintained throughout the life of the contract.

# MR011 The Vendor must comply with the baseline security controls for moderate impact information systems as recommended by the National Institute of Standards and Technology (NIST), Code of Federal Regulations, and CMS.

Industry standards and regulations (e.g. NIST/FIPS, ISO®, HITRUST, HIPAA) are constantly evolving. Regulatory compliance and alignment to standards is therefore a continual process. Cerner commits to work in good faith to review changes to industry standards and regulations, assess their impact, and if applicable determine and effect the steps necessary for compliance.

As part of the overall structure of Cerner's System Security Plan (SSP) applicable state and federal laws, rules and regulations appropriate to Cerner's centrally hosted SaaS solution, are part of the framework of the security plan. The regulations, laws and certification requirements are continuously evaluated and may be represented within Cerner's Enterprise Security Program, SSP and solution specific configurable options. Cerner will provide the HealtheIntent Platform SSP as required by DHHR's of their Security/Privacy Management Plan (SPMP). Cerner's SOC2 Type 2 contains an attestation of many controls found within the SSP.



The Vendor must adhere to and support all security, risks, standards, policies, and procedures of the Department, State, and the WVOT, which can be found at the following link:

http://www.wvdhhr.org/mis/policies.asp

https://technology.wv.gov/security/Pages/policies-issued-by-the-cto.aspx

Cerner's HealtheIntent Platform has been designed with the end user in mind. Therefore, our applications allow clients to either configure or chose from a variety of options to meet their regulatory and policy requirements. To the degree the WV DHHR policies apply, Cerner will work with you to configure your tenancy in a manner which helps DHHR to meet such policies.

The portion of the solution which is completely hosted by Cerner follows a comprehensive Enterprise Security Program which utilizes HIPAA, NIST CSF, NIST 800-53 v4 and ISO® standards as guidelines for the unique requirements for the deployment of Cerner hosted/managed environment. Review of Cerner's Enterprise Security program can be arranged during further conversations related to this service.

#### MR013

The Vendor must agree to incorporate all requirements mandated through federal and State regulations and legislation, including new reporting requirements. The Vendor must ensure that the Enterprise Data Solution (EDS) is current in its ability to accept and employ new standards and requirements as they occur. Formalized change control will be used for all such changes, during all phases of the project as defined in the Change Management Plan.

Our standard applications are designed to support federal regulatory requirements as appropriate to applicable solutions. Modifications may be needed to meet individual state requirements depending on their nature (i.e., prescription formats, state regulatory submissions for public health, vital statistics reporting, or other requirements).

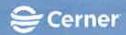
Cerner will adhere to an approved Change Management Plan for all changes. These will be logged and captured in the change management log. Changes will be analyzed, prioritized (effort, cost, risk, etc.), and reviewed through a governance board. Changes specific to DHHR will only be implemented once they are approved by DHHR.

#### MR014

The Vendor must provide right of access to systems, source code, and facilities to the Department or its designee and federal personnel to conduct audits and inspections. The Vendor must provide access to data, systems, and documentation required by auditors and inspectors.

Cerner's HealtheIntent Platform supports a SaaS software delivery model in which software is managed and licensed by Cerner on a pay-for-use basis, centrally hosted, on-demand, and common to all clients. Cerner provides the technology infrastructure, core network, servers, storage, and resources to support the entire Platform. This includes everything from the costs and procurement of sub-licensed software, hardware, storage, and internal networking to the ongoing responsibility of ensuring all applications continue to meet the infrastructure requirements Cerner's clients require.

Cerner's HealtheIntent Platform, technology infrastructure is located within an AWS data center, using infrastructure as a service (laaS). AWS data centers provide on-demand delivery of compute power, database storage, applications, and other IT resources via the internet to operate Cerner-hosted systems. Since Cerner uses both a SaaS and laaS in our delivery model, we provide a combination of physical and virtual access to appropriate system applications specific to the Department's requirements.



Additionally, we share access to the portion of the solution used for customization, those elements (including source code) that become subject to regulation at 45 CFR section 95.617 regarding state and federal ownership and royalty-free licensing (The requirement for a royalty-free, non-exclusive and irrevocable license to software referenced in 45CFR § 95.617(b) which applies only to the software related to the customization and configuration of a COTS product for state use and does not apply to the core product.)

The Department will have access to: (i) the Department's Confidential Information; (ii) the Department's intellectual property; (iii) the Department's owned or leased Equipment (iv) the Deliverables: (v) the Module "look and feel" (to the extent such "look and feel" is original to the Module) and product specifications of the Department: (vi) all Department documents and/or policies included in the Module: and (vii) all Data input and/or stored by Users on the Module.

MR015	The Vendor will operate the Enterprise Data Solution (EDS), perform all functions described
IVILLOTO	The veridor will operate the Enterprise Data Columbia (#20), perfectly and interprise
	:- the DED, and continue all appretions from the date of acceptance of each release until
	in the RFP, and continue all operations from the date of acceptance of each release until
	the section of the contract including one entired
	each function is turned over to a successor at the end of the contract, including any optional
	additional periods or extensions.
	additional portions of extensions.

Cerner will work side-by-side with DHHR throughout the life of the project to resolve issues and perform the functions described in this RFP through operation years of the contract.

Cerner's Turnover and Closeout Phase encompasses all end-of-contract activities and procedures associated with turning over West Virginia data and duties to DHHR or a third-party successor. We document these activities in a comprehensive Turnover and Closeout Plan, which provides the foundation for a successful transition. Our Turnover and Closeout Plan details how Cerner manages the completion and closure of all work for the contract.

MR016	The Vendor must perform according to approved Service Level Agreements (SLAs) and
. :	identified Key Performance Indicators (KPIs) with associated metrics in the areas listed in
	Appendix 5: Service Level Agreements & Performance Standards.

Cerner will work with the Department on approved SLA's upon contract signing as it relates to KPI's. Per Appendix 5, we understand that SLAs and associated KPIs may be added or adjusted by mutual agreement and formalized during the term of the Contract.

Cerner understands the importance of system availability and the need to minimize any negative impact to users. As a SaaS platform, Cerner performs refresh and maintenance activity across the system as a whole; thus, we are not always able to comply to specific client requests. If we do have an update that impacts availability, which happens infrequently, Cerner provides at least 3 weeks' notice.

ļ	MR017	The Vendor must deduct any amount due from future payments if the agreed upon SLAs are
		not met. The Department reserves the right to seek any other remedies under the Contract.

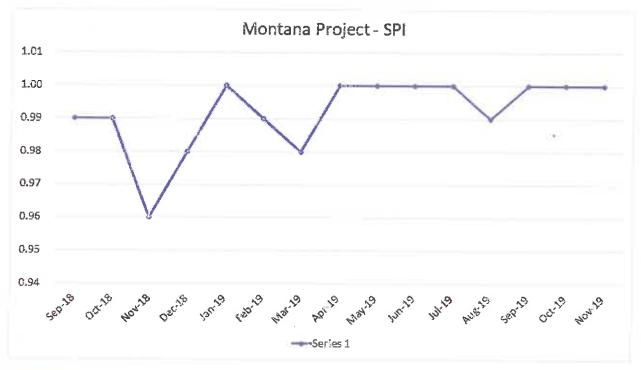
Cerner will work with the Department on SLA penalties and associated fee/payment reduction.



The Vendor must use industry-standard professional project management standards, methodologies, and processes to ensure the project is delivered on time, within scope, within budget, and in accordance with the Department's quality expectations. The Department utilizes the Project Management Institute (PMI) PMBOK methodology

Cerner's Medicaid Deployment Methodology foundation is based on Project Management Institute (PMBOK®) methodology. Our project phases are aligned directly to PMBOK® phases. By utilizing the PMBOK® methodology and tools and techniques, we have had great outcomes with our projects, being on time and on budget. We utilize the Cost Performance Index (CPI) and Schedule Performance Index (SPI) formulas noted within PMBOK®. Recently, our project with Montana the following represents our SPI:

Figure 9 Montana Project - SPI



MR019

The Vendor must provide project status information to the Department and the Enterprise Data Solution (EDS) Project Management Office (PMO) within the required timeframes and in the agreed-upon format, as defined in the approved Project Management Plan.

Project status will be communicated frequently throughout the project lifecycle within the required timeframes and in the agreed-upon format. The status reports and meetings will be discussed in the kickoff events and documented within the Project Management Plan, as well as various other plans. For example, the Documentation and Communication Management Plan will contain the details of the project status. Cerner's project manager will work with DHHR and include the tasks and milestones in the Project Work Plan (PWP) that will be sent to DHHR for review and approval. We will communicate execution of the PWP in the status meeting and reports.



The Vendor must update deliverables at the request of the Department to align with changes in approach or methodology, or to include new or updated information that was not available at the time the deliverable was initially submitted and approved.

Most deliverables will be preceded by a Deliverable Expectations Document. Each Deliverable Expectations Document will provide a brief overview of the deliverable to establish an agreement between DHHR and Cerner on the purpose of the deliverable, its contents, and how it fits within the overall completion of the project (including the deliverable's objectives and scope). The Deliverable Expectations Document captures the following information:

- Deliverable description (outline of contents, with notes to provide further detail on the contents where applicable)
- Methodology for creating the deliverable
- Applicable standards
- Deliverable requirements (from the procurement, Statement of Work, and/or contract)
- Deliverable format
- Deliverable acceptance criteria

Cerner conducts internal retrospective reviews of deliverables on a monthly basis. Cerner will continue to work with DHHR to meet any new or additional requests or updates for the success of the EDS Project. We are dedicated to continuous improvement within our processes, deliverables, templates, and tools based on lessons learned, input from clients, and changes within in the evolving modular Medicaid system compatible with current and future data models.

Cerner is committed to ensuring all deliverables are up-to-date and current with all content and ensure high quality. Cerner will adhere to creating and maintaining all documentation. Any changes to deliverables will be maintained and delivered via PWP milestones. Any new change requests will be logged to ensure that delivery dates are updated and adhered. Cerner will work with DHHR on the changes and will update the PWP with the approved changes' task and activities.

MR021

The Vendor must submit updated deliverables for Department approval based on the Project Schedule approved by the Department.

We understand that updating deliverables cannot impact the overall agreed upon project schedule.

MR022

The Vendor must submit substantive changes to deliverables identified in Appendix 2: Deliverables and Milestones Dictionary to the Department for review and approval within thirty (30) calendar days of the proposed change.

If we have substantial changes to deliverables, we will submit them for Department approval within (30) calendar days.

MR023

The Vendor must provide compliance support services to include providing up-to-date, accurate, and thorough documentation and reporting for regulatory and State compliance auditing.

For CMS certification, Cerner will assist the IV&V vendor with the quarterly certification reports throughout the project's SDLC. We understand that IV&V may reach out with specific questions when preparing the quarterly reports. These questions may refer to such things as the completion status of the Certification Evidence Packets for the SRC's related to specific MECT checklist, the completion of the Appendix B artifacts from the MECT, or the readiness of preparing for the R1, R2, or R3 milestone reviews with CMS. Our proposed Certification Lead,



Jim Peresta, was the MMIS Program Manager for the state of Vermont in 2017 and oversaw the VT Certification state team who achieved CMS Certification for VT's Pharmacy Benefit Management (PBM) module upon the first attempt.

CMS certification status will be highlighted as a specific section on the overall project management status report until the Certification event has been successfully completed. Status reports will be completed weekly and posted on the Project Portal, along with all other project documentation. All documentation on the Project Portal is accessible to DHHR for transparency.

Cerner will assess applicable regulatory changes that impact our software applications and work with our clients to support their continued compliance efforts for regulatory and state auditing. We have a regulatory research and strategy team that reviews new federal rulemaking for regulatory developments. The team identifies any new requirements that should be reviewed with Cerner's solution and application strategists.

#### MR024

The Vendor must provide a report outlining applicable NIST SP 800-53 security control responsibilities noting which security controls are inherited by the Vendor, implemented by the Department, or shared by both parties. This report must be maintained by the Vendor and outline the following:

- Non-compliant and required security controls
- Applied mitigations
- Plan to correct deficiencies
- Cyber security procedures and management plans

Cerner will provide an SSP, addressing applicable NIST SP800-53 security controls of the hosted solution, which will be delivered annually.

#### MR025

The Vendor must coordinate with the Department to develop Centers for Medicare & Medicaid Services (CMS) Certification Checklist documentation for each Medicaid Enterprise Certification (MECT) Checklist the Department identifies as required for CMS certification of the EDS. Refer to the following link for more information:

<a href="https://www.medicaid.gov/medicaid/data-and-systems/mect/index.html">https://www.medicaid.gov/medicaid/data-and-systems/mect/index.html</a>

The Cerner Certification Lead will begin working with DHHR as soon as the contract is awarded to review the CMS MECT 2.3 checklists and determine the applicable checklists and System Review Criteria (SRC) for the West Virginia EDS module. Cerner will trace the checklist SRC to the RFP requirements in the RTM. Cerner will store the CEPs and all supporting documentation on the Project Portal as well as any DHHR state evidence repository. As part of our certification process, Cerner will create a Certification Plan (CP) which will establish the process and guidelines for support DHHR, IV&V and other designated stakeholders through the project. Our certification methodology applies industry best practices, recognizing CMS' revised modular Medicaid Enterprise Certification Toolkit (MECT) v2.3.

Cerner provides appropriate system-related planning, design, development, and implementation-related documents (supporting version control), and test results needed to support and substantiate that the functionality satisfaction of CMS certification checklist items, as defined at the time of the CMS review. Cerner will maintain this documentation throughout the DHHR EDS project to ensure the documentation is up to date with the most current information. The Certification Lead will work with the Project Manager to lay out a certification work plan that will become part of the PWP for DHHR to review and approve. The schedule and tasks will be included in the CP.



The Vendor must coordinate with the Department to develop Centers for Medicare & Medicaid Services (CMS) Certification checklists documentation evidence for all Medicaid Enterprise Certification Toolkit (MECT) criteria related to the Enterprise Data Solution (EDS) and be prepared to work from current and future releases of the MECT to ensure compliance to CMS Certification guidance and processes including, but not limited to, artifacts and deliverables described in Appendix B – Required Artifacts List of the MECT. Refer to: https://www.medicaid.gov/medicaid/data-and-systems/mect/index.html

As part of our certification strategy, Cerner prepares a Certification Readiness Plan in alignment and compliance with CMS' MECT, both current and future releases. We commit to ensuring compliance should an updated checklist become available.

#### MR027

The Vendor must design the Enterprise Data Solution (EDS) to support the Medicaid Information Technology Architecture (MITA) goals for the State as defined in the State's MITA State Self-Assessment (SS-A) and other West Virginia MITA Artifacts provided in the Procurement Library.

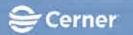
Cerner understands the importance of designing the EDS with the goal of helping DHHR achieve a higher MITA maturity level. Cerner has reviewed West Virginia's MITA State Self-Assessment (SS-A) and other West Virginia MITA artifacts found in the Procurement Library. As Cerner develops West Virginia's requirements for the EDS, we will strive to develop and configure the new system to achieve the highest levels of timeliness of processing, data access and efficiency, cost effectiveness, accuracy, and value to DHHR's stakeholders.

Cerner has established its commitment to modernization and the need to use data to drive significant and sustained improvements in MITA maturity. The modularity standard is supported with our modular, flexible approach to systems development that includes open interfaces, public APIs with the separation of business rules from the core programming. The use of open interfaces and exposed APIs assures it will extract and export the data it needs to interoperate with other entities, including CMS.

#### MR028

The Vendor must agree that the Department retains ownership of all data, procedures, applications, licenses, and all materials developed during design, development, and implementation (DDI), and Operations, as well as the licensing for installed Commercial-off-the-shelf (COTS) software in alignment with 45 CFR §95.615 and 45 CFR §95.617. Manufacturers' support and maintenance for the COTS software licensing subsequent to the initial install must be provided only for the life of the contract. The Department will not issue change orders related to software cost increases.

We confirm that our software being offered for this contract is proprietary to Cerner and we do not expect the ownership provisions of these regulations to apply, as stated in CMS's State Medicaid Director Letter (Mechanized Claims Processing and Information Retrieval Systems-Enhanced Funding. (2020, January 16). Retrieved January 29, 2020, from https://www.medicaid.gov/sites/default/files/federal-policy-guidance/downloads/SMD16004.pdf). All data and materials created during DDI and Operations will be owned by the State.



The Vendor must place the source code in a third-party escrow arrangement with a designated escrow agent who is acceptable to the Department, and who shall be directed to release the deposited source code in accordance with a standard escrow agreement approved by the Department. That agreement must, at minimum, provide for release of the source code to the Department when:

- a) The Vendor notifies the Department that support or maintenance of the Product will no longer be available
- If the Vendor fails to provide services pursuant to this contract for a continuous period
- c) Individual(s) from the Department have directed the escrow agent to release the deposited source code in accordance with the terms of escrow Source code, as well as any corrections or enhancements to such source code, shall be updated for each new release of the product within sixty calendar days of being made available in the production environment. The Escrow agent and the Vendor shall notify the Department in writing when new production versions have been escrowed. The Vendor shall identify the escrow agent upon commencement of the contract term and shall certify annually that the escrow remains in effect and in compliance with the contract. The Vendor shall be responsible for all costs associated with the third-party escrow arrangement. The Vendor shall document the escrow management approach in the Configuration Management Plan.

The Vendor also must place in escrow one (1) paper copy and one (1) electronic copy of all maintenance manuals and additional documentation that are required for the proper maintenance of the software used to develop, test, and implement the Enterprise Data Solution (EDS). Revised copies of manuals and documentation must be placed in the escrow account within sixty calendar days of approval by the State. Such documentation must be the same documentation as that which the Vendor supplies to its maintenance personnel to maintain its software.

When source code is provided, it must be provided in the language in which it was written and will include commentary that will allow a competent programmer proficient in the source language to readily interpret the source code and understand the purpose of the source code.

In the event that this contract expires and is not renewed or extended, the Department maintains ownership of the source code and has the option to continue the escrow agreement until such time that the Department is no longer using the software or documentation covered by this escrow agreement.

In the case of a COTS product, the medium necessary to reinstall that version as part of the Enterprise Data Solution (EDS) platform must be kept in escrow. Any future versions of COTS products must also be kept and provided upon demand. The department will not issue change orders related to software cost increases.

In a SaaS model, traditional escrow practices are not generally applicable and therefore Cerner does not provide source code. Working in good faith with the Department, however, we will escrow source code for all Business Objects and Tableau reports that we create for the Department. This is beneficial in a SaaS model because per the regulation, in this environment the code is owned by the State of West Virginia, as stated in CMS's State Medicaid Director Letter (Mechanized Claims Processing and Information Retrieval Systems-Enhanced Funding. (2020, January 16). Retrieved January 29, 2020, from

https://www.medicaid.gov/sites/default/files/federal-policy-guidance/downloads/SMD16004.pdf). Additionally, any documentation that supports this code will be made available.



The Vendor must ensure that all applications inclusive of Internet, intranet and extranet applications associated with this contract are compliant with Section 508 of the Rehabilitation Act of 1973, as amended by 29 U.S.C. §794d, and 36 Code of Federal Regulation (CFR) 1194.21 and 36 CFR 1194.22.

Cerner products undergo yearly VPAT evaluation to ensure newly developed content and functionality comply with Section 508 Standards. If gaps in 508 compliance are found, a timeline and plan are created in order to meet standards. Teams are also incorporating Section 508 testing into their development process to prevent gaps from being introduced with new content.

#### MR031

The Vendor must ensure that data entered, maintained, or generated to meet the requirements of this Request for Proposal (RFP) is retained and/or accessible according to the federal requirements in 45 CFR Part 75 and/or applicable State and/or federal requirements.

Cerner will retain all data entered, maintained, or generated to meet the requirements of this Request for Proposal indefinitely in accordance with the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for HHS Awards, 45 CFR Part 75. Additionally, Cerner can retain a snapshot of data at any point in time that can also be retained indefinitely. Snapshots of data can be queried or reported on within the context of the timeframe of the captured data.

#### MR032

The Vendor must obtain approval from the Department for all key staff hired under the contract and all personnel assigned to the West Virginia Medicaid Enterprise Data Solution (EDS) Project. In all circumstances, key staff shall be replaced only with persons of equal or greater experience and qualifications.

Cerner assures the competency and eligibility of its employees, agents, and contractors providing Services under this contract. Additionally, Cerner will maintain staffing levels and continuity consistent with its obligation to perform the Services under this contract.

#### MR033

Key Staff assigned to the project must be employed on full-time basis and required to be on-site. On-site is defined as being in the Charleston, West Virginia-based facility between Monday and Friday from 8:00 a.m. Eastern Time to 5:00 p.m. Eastern Time. On-site time excludes the time required to travel to/from the Charleston, West Virginia facility. Each Key Staff role is a full-time position, to be filled by one staff member only. Key Staff roles may not be combined or filled by multiple staff members. All Key Staff members will enter the project within 30 calendar days of the contract award. The Vendor should propose the onsite key staff and ensure how the offsite staff will fulfill project requirements as defined within the RFP.

Cerner confirms all staff assigned to the project are full-time associates of Cerner. For Key Staff roles required by the RFP to be onsite Monday through Friday, those team members will be onsite in Charleston, WV. Cerner employs a model of an onsite team, fully supported by remote associates who will be onsite based on events outlined in the Work Plan and may adjusted by need. Cerner is proposing the Implementation Manager role transitions into the Operations Manager role. (Based on Q&A 185: "No, the State will not consolidate the Implementation Manager and Operations Manager. These roles are engaged at different phases of the project. The person who is the Implementation Manager can transition into the Operations Manager role.) All Key Staff members will enter the project within 30 calendar days of contract award.

MR034

The Vendor must provide the Department a minimum of 10 business days' notice for staffing changes.

Cerner confirms we will notify the Department with a minimum of 10 business days' notice of staffing changes.



MR035 The Vendor must replace key staff within 30 business days after the position is vacant, unless a longer period is approved by the Department.

Cerner agrees to replace key staff within 30 business days. We are committed to maintaining a competent and qualified staff for your EDS project, recognizing extreme cases may require approval by the Department if a longer period is needed.

# MR036 The Department has an interest in ensuring that its operations are carried out in an efficient, professional, legal, and secure manner. The Vendor must remove any staff involved in the project, if the Department determines that any such staff has or may interfere with the Department's interests identified above.

At Cerner, we consider trust a key ingredient to a company's reputation and it is one of the most valuable things we can earn from our clients, partners, fellow associates and the general public. Trust is established through high ethical standards, respectful conduct and a pattern of delivering on commitments. We are committed to providing a safe work environment and promoting the health and safety. We strive to provide a safe environment for Associates and others visiting Cerner. It has always been an important part of Cerner to project a consistent, professional image to our clients.

Further, Cerner's Global Code of Conduct is an important document that provides information and guidance based on laws and our own well-established values. No matter what our roles are within Cerner, we all share responsibility for upholding this code.

Cerner will attempt to resolve any staff performance issues that DHHR identifies. If necessary, Cerner will agree to the removal of the associate.

MR037	The Vendor must accept financial, legal, ethical, and all other forms of responsibility for the
	conduct of all business partners, independent contractors, subcontractors, and other entities
	supporting the Vendor or working with Vendor on the project.

Cerner will be responsible for our team on this project, and for choosing appropriate third parties to assist in the project, and for managing such third parties. Cerner will be responsible for subcontractors to which Cerner delegates Cerner project tasks. Certain existing Cerner suppliers customarily take on direct legal responsibility for their proprietary technology and related services via pass-through terms that are included within the Cerner-client contract. Cerner will work with DHHR to address any issues concerning Cerner suppliers, including any issues regarding any such pass-through terms.

# As a corrective action, the Vendor must provide increased staffing levels if requirements, timelines, quality, or other standards are not being met, based solely on the discretion of, and without additional cost to, the Department. In making this determination, the Department will evaluate whether the Vendor is meeting deliverable dates, producing quality materials, consistently maintaining high quality, and meeting request for proposal (RFP) and contract standards without significant rework or revision

Cerner will proactively monitor staffing levels, timelines, quality, and other standards via a formal risk plan. The risk plan includes periodic reviews where risks are identified, and plans are put in place to mitigate. We will partner with DHHR to achieve the best outcomes for your organization.



The Vendor staff must not have the capability to access, edit, and share personal information data, including but not limited to Protected Health Information (PHI), Personally Identifiable Information (PII), Financial Transaction Information (FTI), and Social Security Administration (SSA) data (including but not limited to family, friends, and acquaintance information) with unauthorized users.

Cerner has technical safeguards in place to limit access to PHI, PII, FTI, and SSA data, along with security policies prohibiting Cerner associates from inappropriately accessing, editing or sharing any such data. Access to such data may be required for appropriate reasons such as managing and supporting the proposed SaaS solution.

#### MR040

The Vendor must ensure that all project staff have completed a Department Office of Management Information Services (OMIS) Vendor Employee Confidentiality Statement (VECS) before beginning work on the project.

Cerner prefers our employees not sign client confidentiality agreements; however, upon hire, Cerner employees sign an Employment Agreement in which they agree not to disclose or use confidential information except for within the course of their Cerner duties and in accordance with Cerner policies. Confidential information includes information about Cerner clients, suppliers and solutions. Our Global Code of Conduct also includes confidentiality protections by which our employees are expected to comply. Cerner associates providing services under this Agreement will fully review the State's VECS prior to commencing work.

#### MR041

The Vendor must comply with Federal Executive Order 11246 related to Equal Employment Opportunity, the Clean Air Act, and the Clean Water Act.

Cerner complies with all applicable requirements.

#### MR042

The Vendor must provide a drug free workplace, and individuals shall not engage in the unlawful manufacture, distribution, dispensation, possession, abuse, or use of a controlled substance in the performance of the contract.

Cerner has a thorough Substance Abuse Policy that complies with the Drug-Free Workplace Act, including provisions for Cerner to run a reasonable suspicion drug/alcohol screen on those individuals who exhibit signs of being under the influence of a controlled substance while at work.

#### MR043

The Vendor must designate one named individual in their proposal as the Vendor organization's Health Insurance Portability and Accountability Act of 1996 (HIPAA) compliance officer.

Cerner's HIPAA Compliance Officer is Marc Elkins, who is also Cerner's Chief Compliance Officer. Marc champions all Cerner activities related to the development, oversight, adherence to Cerner's privacy policies and procedures pertaining to protected health information (PHI) and personally identifiable information (PII). Further, he leads a cross-organizational privacy team and oversees management reporting and budgetary control of privacy activities, and he supports ongoing key initiatives that impact privacy.



#### MR044

The Vendor may not publish or copyright any data using the Department's name without prior written approval by the Department for every instance.

In this context, "data" shall mean all results, technical information and materials developed and/or obtained in the performance of the services hereunder, including but not limited to: all reports, surveys, plans, charts, recordings (video and/or sound), pictures, drawings, analyses, graphic representations, computer programs and printouts, notes and memoranda, and documents whether finished or unfinished, which result from or are prepared in connection with the services performed hereunder. Except with respect to any commercial software, the Department will be and remain the owner of all data provided to the Department by the Vendor or its agents, subcontractors, or representatives pursuant to the contract other than the Vendor's internal administrative procedure records.

We have existing processes related to request for proposals, FOIA and reference requests in place requiring written permission if a client does not have an agreement in place. We will work with the Department to ensure that proper governance and privacy are maintained throughout the life of the contract.

#### MR045

The Vendor must assume software and hardware licensing costs related to the legacy and modern solutions beginning upon execution of this contract and extending through completion of the contract. As each existing software and hardware license expires, the Vendor will renew the necessary licensing as agreed upon with the Department. It is the Department's intent to transfer allowable licenses. However, on a license-by-license basis, the Vendor should obtain the licenses necessary to operate the solution as existing licenses expire. The list of licenses that the Vendor will assume is provided in the Appendix 6:

Procurement Library, (removed per Addendum #4). Current Department license costs shall be used for reference only. The Vendor must not assume that the current Department cost is the lowest cost. The Vendor must assume the license cost for which the Vendor can acquire the license.

As a SaaS offering, the supporting platform is managed completely by the Vendor and thus, there is no additional hardware or software outside of the SaaS subscription. Our solutions are web-based and accessed anywhere to best accommodate the preferred workflow of the Department user. We do not anticipate that it will be necessary for the Vendor to assume or reuse the Department's existing licenses.

#### MR046

The Vendor must procure the necessary licenses required to support its modernized solution. The Vendor is responsible for all licenses required at project initiation and can procure licenses as needed throughout the project, with no additional cost to the Department.

Cerner has included the necessary licenses that are required for this project and for modernizing the solution based on the scope of this RFP. The licenses will be available to DHHR through the life of the contract at no additional costs. Projects that are beyond the scope of the RFP will require negotiations and potentially additional fees.

#### MR047

The Vendor must assume that only 50 concurrent Department licenses are required for the User Acceptance Testing (UAT) Environment, and that only 50 concurrent Department licenses are required for the Training Environment.

Our solution is not priced on concurrent users but instead on members in a population for which we are collecting data. We encourage additional users to use the system if it is beneficial to the DHHR goals.

As a SaaS offering, the supporting platform is managed completely by the Vendor and thus, there are no additional hardware or software costs outside of the SaaS subscription. Our solutions are web-based and accessed anywhere to best accommodate the preferred workflow



of the Department user. We do not anticipate that it will be necessary for the Vendor to assume or reuse the Department's existing licenses.

MR048 The Vendor must be responsible for all costs associated with solution updates or enhancements that are within the scope of the RFP.

Cerner understands that we are responsible for all costs associated with the solution updates or enhancements that are within the scope of the RFP.

MR049 Vendors proposing commercial off-the-shelf (COTS) components must develop all documentation necessary to support the receipt of federal match related to the implementation of the component, upon request by the Department.

Cerner collaborates with DHHR to provide a Detailed System Design (DSD) Document template for the EDS Project. The DSD will follow industry project management and business analyst standards and include detailed data mapping and data flow documentation diagrams for all core and integrated systems/sub-systems, as well as sufficiently address the challenges represented within an integrated systems solution.

We will provide DHHR similar documents we have used in other state's EDS and data analytics projects to review as a template. We believe it is essential to maintain current and up-to-date documentation of all system components through the life of the project. We also work with DHHR to determine the proper level of detail for each system application including user interface, ETL, Data Integration, Data Marts, Data Models, Data Extraction, Auditing, Data Mining, De-Identification of data, Data Analysis and Reporting, architecture, web services, and infrastructure.

MR050 The Vendor must comply with 45 CFR 95.617 Software and ownership rights.

We confirm that our software being offered for this contract is proprietary to Cerner and we do not expect the ownership provisions of these regulations to apply, as stated in CMS's State Medicaid Director Letter (Mechanized Claims Processing and Information Retrieval Systems-Enhanced Funding. (2020, January 16). Retrieved January 29, 2020, from https://www.medicaid.gov/sites/default/files/federal-policy-guidance/downloads/SMD16004.pdf).

MR051 The Vendor must provide a software and hardware solution that is upgradeable and expandable to meet the Department's current and future needs.

The HealtheIntent Platform provides a SaaS solution that is enabled through a secure public cloud infrastructure. Therefore, our hosting plan addresses areas that promote the successful implementation and operation of the HealtheIntent Platform within a SaaS cloud environment as opposed to a traditional data center. The Platform's use of cloud infrastructure eliminates the need for large upfront investments in physical hardware, servers and storage devices and large amounts of time spent on managing hardware. Instead, the cloud infrastructure enables us to provision exactly the right type and size of computing resources needed in HealtheIntent Platform to support DHHR as data needs and requirements expand.

MR052 The Vendor must adhere to the approved Change Management Plan and definitions of modifications and enhancements provided in Request for Proposal (RFP).

Cerner will document the change management processes and procedures in a formal Change Management Plan that leverages DHHR's E-PMO and the established plan, processes, templates, and materials. The Change Management Plan will establish the necessary roles and responsibilities, policies, guidelines, and processes for controlling and managing changes during the life of the project and provides the deliverable to DHHR for review, comment, and



approval. The Change Management Plan conforms to PMBOK® standards and sufficiently addresses the challenges represented within a multi-supplier Environment.

Cerner will produce, update, and submit to DHHR for review and approval, documentation for each request per the Change Management Plan and will work in cooperation with DHHR and other Module suppliers, if applicable. Documentation will come from the change request log that will be available on the Project Portal. This documentation will contain the following information (at a minimum):

- Description of the change
- Impact of the change
- The date the change will need to be implemented
- The priority of the change
- The status of the change
- Person who submitted the change
- Why it is needed

Upon approval of the Change Management Plan, Cerner will inform project stakeholders on the change management processes and what constitutes the change. This helps to mitigate project risks such as overruns in cost and schedule due to unapproved changes in project scope. The Change Management Plan:

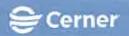
- Establishes a repeatable, structured approach to effectively manage, track, and prioritize changes to the project (involving scope, defects, deliverables, timeline, etc.)
- Defines who will use the change management process during the project life cycle and establish roles and responsibilities
- Provides a repository for change requests and supporting documentation to preserve a historical view, accessible throughout the life of the project
- Provides a structure for and understanding of the impact of a change, including associated risks
- Provides a mechanism by which changes are reviewed, evaluated, approved, rejected, or deferred by the CCB
- Ensures technical and management accountability is in place for each change
- Ensures approved changes are implemented on a timely schedule and at reasonable and expected cost, producing a product that functions to DHHR specifications

The Change Management Plan contains details of the activities and steps for the entire change management process, from initial planning, implementation of approved Change Requests through monitoring and controlling changes to completion. It also includes processes for establishing and maintaining a CCB for the life of the contract. The CCB comprises DHHR staff, Cerner staff, and appropriate staff of other Module suppliers. The CCB reviews Change Requests to determine whether they should be approved, deferred, returned for more information, or declined.

MR053

The Vendor must be responsible for all expenses required to obtain and maintain access to the Department systems. Such expenses include, but are not limited to, hardware, software, network infrastructure, and any licensing costs.

Beyond users having access to computer and a web browser there is no additional hardware, software, or network infrastructure costs required to support our applications.



MR054

The Vendor must be responsible for all costs required for Department staff to access the solution. Such expenses include, but are not limited to, hardware and software necessary to support the solution.

Cerner understands and agrees to this requirement. Please refer to our response to MR053.

#### MR055

The Vendor must be fully responsible for all ongoing security monitoring of the solution for the life of the contract (or until such time that the Department and the Vendor come to an agreement to take a different approach to security monitoring), as described in the Security Requirements contained in the Business and Technical Requirements Appendix 1: Detailed Specifications of the RFP, independent of any other audits and inspections that take place.

Cerner maintains complete responsibility for security monitoring of the solution at the network level. These monitoring policies and procedures follow Cerner's information security policies which are based on guidance from HIPAA, NIST 800-53, NIST CSF and ISO® 72001. The State may decide to view these policies in a secure location, although Cerner may exclude any that may risk our ability to maintain the privacy and security of the environment if released.

MR056

The Vendor must make available to the Department, the results of any third-party audit conducted, including, but not limited to the Service Organization Control (SOC) 2, on the Vendor's organization.

Cerner will provide the SOC 2 reports for our hosted infrastructure services. The AWS SOC 2 will need to be requested by the Department separately.

### MR057

The Vendor must provide Department stakeholders access to conference space at the Vendor's site with accommodations for twenty participants at a minimum. The conference space must be furnished with standard conference room furniture, and equipped to support the design development and implementation (DDI) review, planning, testing, and training sessions required of the Vendor. The conference space must have a computer and projector for displaying presentations and supporting presentation material, and a high-quality speakerphone, with extendable microphones, to allow multiple remote staff to attend meetings by telephone. Conference space must also accommodate video conferencing and web-based application sharing for attendees.

Cerner understands this requirement and agrees to comply.

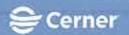
## MR058

The Vendor must acquire and maintain office-space (henceforth, "Vendor Facility") available 24 hours per day, during 365 days of the year, including all holidays, to support contracted services. The Vendor Facility must be staffed with employees hired specifically to support the scope of services in this Request for Proposal (RFP). In addition, the Vendor Facility must be located in Charleston, West Virginia within five (5) miles of the Office of Management Information Services (OMIS) Office, located at One Davis Square, Charleston, West Virginia. All key staff members proposed in this RFP for both implementation and maintenance and operations must be located at the Vendor Facility.

Included in the space shall be a minimum of two (2) private offices for Department staff, a reception area, a security barrier isolating the public entrance and reception area from the rest of the facility, and restroom facilities. The site will provide space for project team meetings and work sessions.

The Vendor must assume all costs related to securing and maintaining the facility for the duration of the contract including but not limited to, hardware and software acquisition necessary to maintain approved service level agreements (SLAs) throughout the life of the contract, maintenance, lease hold improvements, utilities, office equipment, supplies, janitorial services, security, storage, transportation, and insurance.

Cerner agrees to comply to this requirement by excluding any sublease offerings and verifying that the selected Vendor Facility will have unrestricted access rights.



	MR059	The Vendor must obtain prior written approval from the State for the proposed layout of the			
		facility, including specifications relating to location, space, leasehold improvements, and			
		support equipment prior to execution of the office lease.			
ĺ		The Vendor must seek and obtain the State's prior written approval for any relocation Vendor			
		Facility at, from or through which the services are provided and shall mitigate any impact to			
		the State. Any such relocation shall be without additional cost to the State.			

Cerner understands this requirement and agrees to comply.

MR060	The Vendor must be responsible for all costs related to the rental and operation of such facility, including, but not limited to: leasehold improvements, utilities, a minimum 100 megabyte per second (mbps) connection, office and building security, telephones with voice mail and caller ID, a toll-free line for the Help Desk telephones with roll over and messaging, office equipment (two fax machines and a networked color copier and scanner), general office supplies, storage, janitorial services and supplies, and any necessary facility
	general office supplies, storage, janitorial services and supplies, and any necessary facility insurance.

Cerner understands this requirement and agrees to comply.

	MR061	The Vendor must ensure that Department staff office space in the Vendor's Charleston			
		facility can be individually locked. This office space must be fully equipped with furniture;			
İ		telephone service, a minimum 100 megabytes per second (mbps) connection to the internet,			
		and access to a color printer and copier. The following reserved or paid parking spaces must			
		be provided to accommodate designated Department staff: two Department parking spaces			
		and five general visitor parking spaces.			

Cerner understands this requirement and agrees to comply.

1	MR062	The Vendor must design the Enterprise Data Solution (EDS) to support the Medicaid
ı		Information Technology Architecture (MITA) goals for the State as defined in the State's
		MITA State Self-Assessment (SS-A) and other West Virginia MITA Artifacts provided in the
١		Procurement Library.

Cerner understands DHHR's MITA maturity goals and we have designed a solution that will help support DHHR in their MITA maturity efforts.

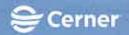
MR063	The Vendor must supply documentation of components and procedures such that the		
	solution could be operated by a variety of contractors or other users for any systems and		
1	modules developed, installed, or improved with ninety (90) percent federal funding		
	participation (FFP) match.		

Operational manuals and user documentation of applications and procedures will be produced to satisfy requirement.

MR064	The Vendor must work with the State to define, integrate, and maintain all data sources
	deemed necessary to the Enterprise Data Solution (EDS). This includes those data sources
	identified throughout implementation and maintenance and operation.

Core to Cerner's data and insights Platform, HealtheIntent, is the ability to ingest data sources from more than 85 EHR systems, 185 claims payers, 1,130 unique data sources, and many more data sources, including both standard and non-standard data, as deemed necessary to the EDS. As data is received, it is aggregated, normalized, and maintained within Cerner's Enterprise Data Warehouse and is defined within our data dictionary to be used in the data models for analyses and reporting.

Cerner recognizes the everchanging business needs of the Medicaid landscape and will work with DHHR as new data sources are identified for ingestion into the Platform. Cerner will work



with DHHR on the specification by making them available and easy to understand for integration into the Platform.

Cerner looks forward to finalizing the list of data sources during the initial Project Work Plan reviews. Adjustments will be made as necessary to adjust to changing goals and needs of the Department.

#### MR065

The Director reserves the right to require any Vendor that files a protest of an award to submit a litigation bond in the amount equal to one percent of the lowest bid submitted or \$5,000, whichever is greater. The entire amount of the bond shall be forfeited if the hearing officer determines that the protest was filed for frivolous or improper purpose, including but not limited to, the purpose of harassing, causing unnecessary delay, or needless expense for the Agency. All litigation bonds shall be made payable to the Purchasing Division. In lieu of a bond, the protester may submit a cashier's check or certified check payable to the Purchasing Division. Cashier's or certified checks will be deposited with and held by the State Treasurer's office. If it is determined that the protest has not been filed for frivolous or improper purpose, the bond or deposit shall be returned in its entirety.

Cerner understands and agrees to this requirement and agrees to a litigation bond.



# ATTACHMENT G: BUSINESS SPECIFICATIONS APPROACH

Instructions: The Vendor should provide a narrative overview of how the proposed system will meet the business specifications. Use the response sections to provide specific details of the proposed approach to meeting the business specifications in each subject matter area. Responses should reference specifications and relevant mandatory requirements using the appropriate IDs from Appendix 1: Detailed Specifications and Attachment F: Mandatory Requirements. DHHR also expects the Vendor to propose its approach for meeting any narrative included in Section 4: Project Specifications of this RFP. Responses in this section should be highly focused on the business processes and specifications and not simply provide generic or marketing descriptions of solution capabilities.

If the Vendor is proposing a phased implementation, the Vendor should indicate how that approach may or may not affect functionality. Additionally, the Vendor should indicate exception handling processes where appropriate and any dependencies on existing systems or components of the new system to provide the specified functionality.

## PROPOSED SOLUTION TO BUSINESS SPECIFICATIONS

The HealtheIntent Platform has significant flexibility in data ingestion and the ability to receive Medicaid, healthcare, administrative, open source, and other types data from over one thousand traditional and non-traditional unique data sources. Our solution maps the data to 252 standard

terminologies and groups, approximately 7 million standard terminology codes, allowing the normalization of data across sources and terminologies. We have considerable experience helping our clients to maximize data from disparate sources and use that information to drive improved outcomes.

We provide a comprehensive application that summarizes data for program management, data analysis, forecasting, monitoring, and reporting. With out-of-the-box content, services, and technology, we help DHHR identify trends, predict future outcomes, and use industry standards to support care management, financial management, program management, policy and budget formulation, clinical outcomes, forecasting, programmatic monitoring, trend analysis fraud, waste, abuse, and more.

#### **DHHR Benefit**

- Flexible and adaptable with current and future data models, business intelligence, and analytics tools
- Easier alignment of provider, MCOs and health initiatives in driving quality improvement and valuebased payment reforms, while improving accuracy and transparency
- Support population health and payment reform to improve health outcomes and enhance organizational decision-making activities to manage the effectiveness of the managed care program

Care Management—With significant flexibility and experience in data ingestion, we help DHHR make sense of the data and position the Department to take action to target and improve health outcomes for West Virginia. MCO (Managed Care Organizations) data is visualized to understand performance and analyze data, such as medical, dental and pharmacy claims, provider enrollment, capitation levels, and more. Access to this data helps you drive care management, implement performance measures, enhance program accountability, and other innovation so populations and members can receive the best outcomes in a cost-effective and timely manner.



Financial Management—With the HealtheIntent Platform and the ability to incorporate data from various external systems, we can help DHHR track your volume and reasons for spending, identify where you can save money due to claims processing errors including double billing/payment, and help you forecast your budget and appropriate every dollar spent. Additional financial management assistance is delivered via federal financial reporting capabilities, the CMS 21 and 64 reports, and T-MSIS.

Program Management—The HealtheIntent Platform enables DHHR to quickly and effectively analyze data for informed program management decisions. We provide predictive modeling using clinical, quality, and social determinants of health metrics adhering to evidence-based and national standards, risk scoring/stratification, normative comparisons, and other methods. With HealtheDataLab, DHHR can use predictive modeling to assist with case mix adjustments and help assess the risk levels and variance across each Managed Care Organization (MCO). DHHR will be able to create specific reports, ad hoc data models, calculations, and more with standard best practice content. Through our single data analytics Platform, we help to empower state agencies to drive effective change for Medicaid recipients and proactively manage your populations.

Program Integrity—Tyler Technologies, in partnership with Pulselight, provides a broad spectrum of program integrity analytics tools and case management applications covering program integrity requirements, including analytics, reporting, and investigative workflow management (case intake, decision to investigate, referral to another authority, appeals, recovery, and closure). Their continuous configurability allows for adaptation in response to ever-changing agency, regulatory, and statutory business requirements.

To support the business specifications of the EDS project, the HealtheIntent Platform provides a suite of coordinated technologies pre-loaded with both SaaS content and robust, flexible functionality. In the following table we describe the applications and tools capabilities.

Table 23 HealtheIntent Platform Applications and Tools

Applications & Tools	Capabilities				
HealtheEDW	Cerner's enterprise data warehouse (HealtheEDW) integrates and leverages data from emember's longitudinal record. Enterprise Data Warehouse enables population and enter wide insight through structured analytic experiences, MCO oversight and accountability, ad-hoc reporting capabilities. Data continuously flows through HealtheIntent and updates outcomes and performance. HealtheEDW provides predefined reports and data discover experiences built around Medicaid use cases.				
HealtheAnalytics	Cerner's analytics application displays all relevant metrics face-up. Users can identify tren and better determine their root cause by manipulating metrics as appropriate. HealtheAnalytics is powered by data ingestion, standardization, and calculation capabilities the HealtheIntent Platform. DHHR can derive insights from available data and devise plan action to attain sustainable outcomes.				
HealtheDataLab	HealtheDataLab draws normalized data from DHHR's HealtheIntent Platform to support research, data science, and health intelligence initiatives. On-demand cloud computing platforms enable localized and enterprise-wide analysis for all modeling needs at scale. HealtheDataLab empowers DHHR to leverage investments in your customized statistical environment, providing flexibility in tool selection depending upon user preference.				
HealtheRecord	Our Longitudinal Record provides DHHR users and stakeholders an organized, logical view of aggregated data for each member. It enables West Virginia to consume the most recent member data in a single screen and allows for quick searches of vast quantities of information. This functionality is invaluable in gathering insight into complex populations (e.g.				



	former foster children) and for high utilizers to gather additional information.
HealtheRegistries	HealtheRegistries enables clients to identify gaps in care and attribute, measure, and monitor people at an individual, provider, or population level. Users can target individuals or populations to reveal, for example, high-volume service utilization, opportunities for improve quality of care, and at-risk members. DHHR can apply this information to develop and implement targeted interventions and program change.
Cerner's Master Person Matching	Cerner's Master Person Matching is the internal External Master Patient Index for our platform. It features algorithms to match incoming data to existing member records using 12 demographic properties. Our tool use probability matching algorithms to identifying if data is related to an existing member record and uses all available data to determine relatedness between records. The system assigns a similarity score for each match. The system will link the member record with the data that meets configurable matching thresholds and does not require human validation.
Program Integrity	The Program Integrity application provides a broad spectrum of program integrity analytics tools and case management applications covering program integrity requirements, including analytics, reporting, and investigative workflow management (case intake, decision to investigate, referral to another authority, appeals, recovery, and closure) The application's continuous configurability allows for adaptation in response to ever-changing agency, regulatory, and statutory business requirements.
i <b>2i</b> Links	A standards-based proprietary interface technology that offers predictable and consistent results and supports a growing number of communication protocols such as HL7 over TCP/I and Web Services. This powerful, full-featured integration layer connects disparate systems of clinical data, laboratory systems, financial reporting systems, payer and claims systems, Enterprise Data Warehouses (EDW), Health Information Exchanges (HIE) and more. Over 6 interfaces are part of the i2iLinks library, making it one of the most comprehensive interface systems available today. i2iLinks also provides operational support to the system in regard to code updates, logging and status reporting.
P2Sentinel	An auditing tool for tracking privacy and policy regulations by measuring auditability, policy accountability, and improvements against the policy
SAP BusinessObjects	SAP Business Objects is a third-party tool that provides a visual drag-and-drop interface to support robust custom reporting. It allows users to create queries on the fly; introduce formulas and new variables to existing objects; and aggregate, filter, and group by desired elements.
Tableau	Tableau is a third-party tool that supports data discovery and interactive visualizations such as trend lines, histograms and tree maps. This tool allows users to interact with data (10M+row data sets) rather than viewing a static report.
SQL	SQL is used for the retrieval and extraction of information from a database by enabling users to create their own data sets from existing data, create their own data models, and write their own queries using free hand. The SQL Query writer supports query development at a simple complex, advanced, and sophisticated analytic reporting level that helps end users view and understand their data.
Project Portal	The Project Portal serves as project management website and a hub of communications for the West Virginia EDS project. It is a comprehensive document repository, allowing for maintenance, versioning, and search capabilities throughout the life of the project. It houses the management plans, status reports, risk and issue log, agendas, minutes, project deliverables, and other project documentation available to all designated MMIS project stakeholders.
eService	eService is an online trouble-ticket system that allows user to log and track Service Records from any approved device and at any time. We offer support services through various access points including eService, and Cerner Support, and self-help.

These applications allow for customization throughout the strategic service-oriented partnership agreed upon by Cerner and DHHR. We boast a proven track record of ingesting and integrating both traditional healthcare data (e.g., clinical and claims sources), as well as rich non-traditional



data such as pollution, housing, and criminal justice sources. Not only do we have experience in storing and incorporating disparate data sources, Cerner has delivered actionable insights derived from these data sources through our SaaS reports and algorithms. Our technology, content, and services not only meet DHHR's technical specification goals, but can grow with DHHR's evolving needs. Our joint goals will include the development of an EDS with the data sources necessary to support better care, better health, and lower costs for West Virginians.

Cerner meets the Department's goals to provide increased shared use and improve data analytics and reporting capabilities with our pre-defined content libraries to maximize, promote and improve the use and reuse of State resources across the enterprise, reducing database duplicity and ultimately realizing a much more efficient EDS. Our solution offering aligns with DHHR goals as illustrated in the following table by our proven experience.

Table 24	DHHR	Renefits	of Cemei	r Solution
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Corner Offers	DHHR Benefit	Our Demonstrated Ability
Cemer goes beyond traditional Medicaid data providing DHHR with the experience you need for your expanded data goals	DHHR realizes greater return on investment with Cerner's single Platform supporting non-traditional data sources to expand beyond the four walls of West Virginia's Medicaid agency.  From a clinical data perspective with our HIE and EHR experience, DHHR makes a significant leap with unique sources of data including claims, clinical, and non-claims data to ultimately target health outcomes.	different types of data coming together
Cerner gets you farther and faster with pre-defined, pre- built content.	With our pre-defined risk algorithms and quality measures, as well as out of the box reports and reliable risk reports, DHHR can feel confident in the quality of data through our upscale capabilities. While we provide content from day one and throughout the full duration of the contract, we continue to deploy new standard content based on our collaboration other states, agencies, payers, and health systems to continuously bring value to West Virginia.	Our application content includes structured data to allow analysts to more easily create analytics on that data. Considering that West Virginia will have over a hundred data sources, we have found that users may be confused unless there is an advanced system which standardizes and normalizes. With our application of structured data, analysts easily create analytics, saving time and improving efficiencies and outcomes.
Cerner brings use/re-use capabilities by allowing you to rapidly do new things without having to build from scratch to ultimately help DHHR meet growth goals.	HealtheAnalytics enables State staff to visualize and analyze data, create workbooks, visualizations, dashboards, and stories. It supports data discovery and graphical and geographical reporting using the embedded business intelligence capabilities.	Our team has experience bringing data in, mapping to standard vocabularies, bringing in reports, experience bringing in Healthcare Effectiveness Data and Information Set (HEDIS) and other quality measures out of the box.
	The embedded advanced business intelligence and visualization reporting tools—SAP BusinessObjects and Tableau—provide presentation-ready	The content library concept brings value to help understand what to look for in a claim and EHR record so that data is loaded once but can be reused



outputs and include numerous options to explore data graphically and to apply analytical processing depending on the use case without the need for the analyst to reinvent the wheel. State staff may access ad-hoc reporting and other self-service analytics content development capabilities so you can get to the tools, understand the data and use it easily

Cerner helps DHHR expand the EDS by ingesting complex healthcare data and integrating with non-traditional data sources (e.g., Department of Corrections, housing data, etc.). A critical factor in deriving value from an EDS is solution flexibility to allow for data models, reports, analytics, and predictive models creation. This will ultimately provide DHHR the power to shape the EDS as your needs evolve. While some vendors simply load data and defer all the complex data cleaning to the end user, Cerner believes it is vitally important to standardize and normalize data to allow analysts and data scientists to focus their efforts in pursuing insights from this curated data and aligning these insights with critical business needs.

#### 1. CARE MANAGEMENT

Refer to the relevant business specifications located in *Appendix 1: Detailed Specifications* and pertinent narrative in *Section 4: Project Specifications* in this RFP to cover solution capabilities in this area. The Vendor should describe its approach to Care Management below. The narrative response for this category should be organized using the appropriate subject matter area as per *Appendix 1: Detailed Specifications*.

Our strategy for your care management program is built around the following:

- Standard content—Out of the box content to help you manage your member population and provide oversight of MCOs. With these organized, actionable views of the data, and the ability to receive data from traditional and non-traditional data sources, our clients have access to a growing library of over 150 standard report templates based upon the most common use cases and newly emerging topics. Examples of these standard reports include Beneficiary Access to Care, MCO Performance, and Member Management. In addition to this out of the box content, HealtheIntent includes applications and tools to define additional calculations, logic, and aggregations.
- Services—Cerner's team includes experts in advanced statistics, machine learning, and
  data science. An analytic data services team will work with DHHR to develop methodologies
  and algorithms to transform data into actionable intelligence and identify opportunities for
  improvement, aid in strategic planning, contribute to intervention design, and monitor
  results. This team will help identify trends and recommend corrective actions as needed to
  positively impact target populations.
- Analytic tools—Cerner provides DHHR with the ability to conduct analyses in-house using our analytic application, HealtheAnalytics and HealtheDataLab. HealtheAnalytics enables users to integrate, visualize, and analyze data, and to create workbooks, dashboards, and stories. It supports data discovery and graphical and geographical reporting using its embedded business intelligence tools. HealtheDataLab is a single environment designed to help researchers and data scientists answer deep and complex questions, providing statistical and data science-oriented tools to query data, extract and transform data sets into research-ready formats, build complex models and algorithms, and validate findings.



The above resources are available throughout the life of the contract and allow for multiple business purposes, including:

- Quantitative analysis through predictive modeling and advanced statistical analysis
- Measurement of performance and benchmarking progress toward business goals
- Data visualizations for departmental, divisional, and enterprise perspectives

With the HealtheIntent Platform and our experience in a modular environment, we bring together data from different sources to help our clients meet program initiatives, including state and federal requirements. Our team is with you through the life of the contract and available to help identify new reports and maximize value as you identify new needs for research and program initiatives.

Cerner recently onboarded 18 data sources for the state of Montana (including claims/ MMIS, financial eligibility, and clinical data types), and deployed 6 integrated applications (HealtheEDW, HealtheAnalytics, HealtheRegistres HealtheDataLab, T-MSIS, and CMS Federal Reporting). This was accomplished through an aggressive speed to value plan with iterative deployments over an 18-month timeline.

This led to key benefits for 350+ users across the state of Montane, as well as increased visibility of performance across dozens of program areas in the state (e.g., CPS+ PCMH, T-HIP), and source data quality improvements as a result of gaps identified by Cerner data teams.

CM001

The solution should have the ability to collect and maintain data necessary to support budget neutrality reporting requirements as specified by the Centers for Medicare & Medicaid Services (CMS) and the Department.

Cerner stores granular claim and encounter data, as well as program/waiver enrollment data for evaluation of individual programs. This allows the user to determine spend and relative spend to MCO, waiver, fee-for-service (FFS), and more. DHHR will be able to monitor participating provider and MCO performance against quality outcomes and trend applicable payment incentives, including comparisons between FFS and MCOs. We offer a large catalog of standard reporting outcomes and measures for DHHR to review, including state and federal reporting requirements. We produce many CMS reports, including a catalog of typical Management and Administrative Reporting (MAR) reports as well as the suite of Medicaid and CHIP Business Information Solution (MACBIS) reports such as CMS-21, CMS-37, CMS-64, CMS-372 and CMS-416. Cerner generates the reports that include information for the CMS-64 and CMS-21 in a format that supports manual entry into the CMS automated Medicaid Budget and Expenditure System/State Children's Health Insurance Program Budget and Expenditure System (MBES/CBES).

CM002

The solution should have the ability to generate fee-for-service (FFS) claims reporting for services furnished outside of a capitation agreement including, but not limited to: services carved out of the managed care program.

We store FFS data for analysis. We identify specific programs and drill down into analytics on those programs. For example, when looking at a population with a specific condition such as chronic pain, you can drill down into metrics and perform trending specific to the attributes of that population and ascertain how to better manage that population. In contrast to brain injury, behavioral health members have an entirely different set of conditions, services, and needs.



Through a combination of predefined reports, predefined measures, services to build unique measures, and the ability for you to build additional views independent of Cerner, we provide the tools for you to define and track measures around each of the individual programs and how to best manage them.

CM003

The solution should have the ability to capture and support analytics of data on member service utilization including, but not limited to:

Cerner has significant experience helping our clients identify how to maximize data from disparate sources and turn that into information and knowledge. Healthelntent applications capture data from internal and external sources, such as public health or behavioral health data, and makes it available for incorporation into analytics, reporting, forecasting, and mapping where appropriate. It consumes the needed data, and once the data processes and normalizes, the data is available for use. We not only store the data, but we help you utilize the data for meaningful analysis through Cerner's Master Person Matching logic, standardization, out of the box algorithms, and other mechanisms. As part of our implementation strategy, we will conduct strategy sessions, recommend best practices, based on our experience, and work with you to refine the approach based upon your feedback.

CM004

Behavioral health services

We have experience incorporating behavioral health services data and identify ways to improve care and outcomes. For example, we identify individuals based not only on a documented diagnosis, but also based on other strongly correlated factors such as medications that indicate mental health concerns. Once these populations are identified there are numerous ways to stratify them and determine different clinical and non-clinical mechanisms for better outcomes. For example, our Opioid Use Dashboard provides a view to programs through the lens of opioid use and prescribing patterns, supporting the ability to identify the population most at risk for addiction and overdose. We have also completed work to identify psychotropic medication utilization, incorporating the diagnosis and rate of utilization of those medications compared to foster care to non-foster care children. We have 32,000 additional concepts similar to this, that identify ways to improve care and outcomes.

We apply logic to your data to quickly identify populations of interest, such as those most vulnerable and potentially costly behavioral health members. For example, we identify members who have behavioral health needs and are only receiving psychoactive-related medications for treatment; or members receiving psychoactive-related medications without an associated behavioral health diagnosis. Furthermore, we incorporate non-traditional data such as data from homeless shelters, criminal justice arms, and EMS services. We are continually evaluating and evolving to include the data that is important to our clients and how to incorporate tit to add value. For example, we recently completed a project with one of our Medicaid clients that combined United Way homeless shelters housing data, criminal justice data, hospital data, temporary housing data, and foster care data. With this data, our client is able to better manage behavioral health and homeless populations, identify their highest utilizers, target resources more effectively, identify those at risk of housing instability problems, and counteract those challenges.

CM005

Medical services

With 40 years of experience as an EHR vendor, Cerner is an expert in managing data related to medical services. We provide dashboards to monitor medical service utilization trends. For example, the High Utilizer dashboard provides greater insight into reducing unnecessary or



inappropriate utilization of emergency health services. In addition to utilization metrics, we provide metrics that drill down into categories of utilization that may be used to effectively reduce avoidable utilization. For example, the Avoidable Emergency Department (ED) dashboard provides insight through algorithms that identify ED visits that are "non-emergent" or "primary care treatable". Efforts that focus on avoidable utilization are more likely to be effective than less discerning efforts. Standard content also supports evaluation of the quality of medical services. For example, the MCO Dashboard provides insight and the ability to monitor participating provider and HMO/MCO performance against quality measures. Many clients use this data as part of an alternative payment model and can evaluate the effectiveness of that model on outcomes so that the program can be refined over time.

## CM006 Dental services

We provide metrics to identify populations that do not receive preventative care. We also provide the ability to drill down into the details of individuals who are receiving high cost procedures and what factors might be predictive of those events so they can be avoided. One of the aspects that can be analyzed as part of dental services is if access to care is contributing to not receiving the preventative care, factoring in the types of providers and their capacity to see Medicaid members.

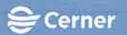
### CM007 Pharmacy services

We have extensive experience pulling in different types of pharmacy data from a wide variety of systems, including claims, data from EHR inpatient pharmacies, and data from outpatient pharmacies (CVS, Walgreens, etc.). Once the data processes and is normalized, it is available for incorporation into analytics, reporting, forecasting, and mapping, where appropriate. We do not only store the data, but we can help you utilize the data for meaningful analysis through Cerner's Master Person Matching logic, standardization, out of the box algorithms, and other mechanisms. We identify medication adherence to reduce unnecessary care utilization, the need for subsequent meds, and emergency room visits. Additionally, we provide a generic versus name brand discovery to identify high cost medications. One of our Medicaid clients is using our solution to identify their topmost expensive prescriptions. We are also able to determine distance between member's residences and pharmacies, as that may be a factor in medication adherence.

### CM008 Others as defined by the Department

At Cerner, we approach health care as it pertains to the whole person. We recognize that both traditional and non-traditional data are included as part of an individual's health. Our approach of looking at the holistic person is critical in understanding areas where you can provide better preventative care and intervene early enough to provide better outcomes. Not only do we provide out of the box content, but we also work closely with our clients to incorporate their expertise in solving difficult problems. For example, our Avoidable ED Visits reporting was created by one of our academic medical institution clients who developed ways to classify that care. With our wide range of clients, we are able to share information across various sectors, including employers, commercial health plans, hospitals, outpatient, acute, and more.

We also embed geographic information system (GIS) information identifying individuals in rural locations who may not be conveniently located to accessible care. GIS calculations are combined with any other data in the system to produce advanced visualization analysis. This reporting incorporates access locations and drive time. We provide optional services to our clients and we also strive to continually evolve our standard content, creating specialized areas



that we deploy as part of our standard operations. As part of our implementation strategy, we will conduct strategy sessions, recommend best practices based on our experience, and work with you to refine the approach based upon your feedback. Cerner is continuously looking for new and innovative projects with our clients. We look forward to the Department bringing forward new ideas around the data they want to capture regarding member service utilization.

CM009

The solution should have the ability to track the number of members assigned to providers.

We have data models that incorporate attribution between members and providers. This includes the ability to look at the routine care individuals should be receiving and identify if certain providers are not able to deliver effective and efficient care due to capacity or influx of members. We can also incorporate capacity for certain services, for example, capacity at substance use disorder clinics. Aside from simply receiving information, we also ascertain details such as lack of access to care by geographic area and more.

CM010

The solution should have the ability to capture provider data including, but not limited to:

The ability to capture provider data is an inherent core piece of our data model that we have populated in every Medicaid client. Our standard data model allows Cerner to capture a vast majority of what DHHR is looking for in a qualitative and efficient manner. In addition to our core data analytics, our application has the flexibility to meet the unique needs of DHHR.

CM011

Provider identification (ID) number

Provider identification number is captured as a core piece of our data model.

CM012

Provider type

Provider type is captured as a core piece of our data model. The core model tracks the current value as well as historical representation so that analytics can use the appropriate value.

CM013

Provider specialty

Provider specialty is captured as a core piece of our data model. The core model tracks the current value as well as historical representation so that analytics can use the appropriate value.

CM014

Provider affiliation

We support the ability to ingest data and drive additional affiliations based on analytic use cases. For example, we can identify multiple member/provider and provider/health system relationships across care, such as primary care, specialty care, bundle specific affiliation, and other affiliations. The core model tracks the current value as well as historical representation so that analytics can use the appropriate value.

CM015

Provider physical address

Provider physical address is captured as a core piece of our data model. The core model tracks the current value as well as historical representation so that analytics can use the appropriate value.

CM016

Provider mailing address

Provider mailing address is captured as a core piece of our data model. The core model tracks the current value as well as historical representation so that analytics can use the appropriate value.



CM017 Others as defined by the Department

The HealtheIntent Platform is very flexible and can incorporate and capture data from many sources. Our standard data model covers an extensive list of details. As part of our implementation strategy, we conduct strategy sessions, recommend best practices based on our experience, and work with you to refine the approach based upon your feedback.

CM018

The solution should have the ability to track a provider's capacity to accept additional members.

We support the ability to track a provider's capacity on various levels and identify if they have the capacity to take on additional members while still providing effective care. We also track provider capacity for various types of care ranging from primary care, specialized care, Substance Use Disorder (SUD), and more. We have experience leveraging data that impact health from food bank capacity, housing, transportation services, financial assistance, and other social services. As part of our implementation strategy, we conduct strategy sessions to understand your needs, recommend best practices based on our experience, and work with you to refine the approach based upon your feedback.

CM019

The solution should have the ability to identify providers based on provider type and/or specialty.

Provider specialty and type is captured inherently within the system and can be used to identify and analyze extensive subsections of care. Examples of ways we have utilized specialty in analytics include:

- Access to specialized care providers
- Evaluating spend for a bundle of services, e.g., inpatient and outpatient services related to surgical events
- Evaluating quality of care within specialties based on unique measures for those specialties

CM020

The solution should have the ability to capture and support analytics of data for cost reporting and financial monitoring of waiver programs.

We support the ability to compare the current cost of individuals on a waiver to the cost of care they were previously receiving. We also offer data science services that can run simulations of these various proposed programs and use existing research from other states to get an idea of what the projected cost and health outcomes would be. An example includes the ability to link to clinical guidelines to help ensure providers are managing populations as effectively as possible.

CM021

The solution should have the ability to capture current and historic utilization trends including, but not limited to:

We support the ability to capture and report on current and historical trends. The ability to analyze data enables users to identify trends and further analyze why they are occurring. The analytics are designed around specific use cases and powered by the data ingestion, standardization, and calculation capabilities of the HealtheIntent Platform.

CM022

Inpatient specialty care

We track utilization rates for various specialty care at a high level to evaluate if high cost inpatient care may have been prevented, such as bundling of care. For example, for joint replacement we can help evaluate if the recommended presurgical consultations took place, evaluate the cost of actual inpatient stay (e.g., were the proper procedures taken to avoid



infection), length of inpatient stay, post inpatient stay (e.g., was physical therapy completed and other follow-up appointments), determine readmission, and more. Additionally, our episode management analytics package tracks episode spends and utilization relative to a target and identifies opportunity for utilization reduction across the continuum (e.g., inpatient/outpatient through post-anchor event -90 days).

# CM023 Inpatient substance use disorder (SUD) services

We support the ability to track individuals who have been identified as having a SUD and compare that data to who is actually receiving services linked to that treatment. For example, our opioid report identifies individuals who received specific services after they were identified with a SUD. We also include measures as defined by Physician Quality Reporting System (PQRS), National Quality Forum (NQF) and Electronic Clinical Quality Measures (ECQM) that focus on tobacco, alcohol and other drug treatments we track against. There are many sources helping us identify SUD individuals who do not have a diagnosis. For example, we can leverage data from the police, medications prescribed, and EMS data. With this data you can help connect those individuals to treatment and monitor the extent and effectiveness of their treatment.

# CM024 Others as defined by the Department

Users can create their own data models and combine them with the standard data model to address a variety of use cases. As part of our implementation strategy, we will conduct strategy sessions to understand your needs, recommend best practices based on our experience, and work with you to refine the approach based upon your feedback.

# CM025

The solution should have the ability to develop metrics to support the evaluation and monitoring of substance use disorder (SUD) including, but not limited to:

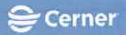
We incorporate data and metrics supporting the evaluation and monitoring of SUDs. We have significant experience helping our clients identify how to maximize data from disparate sources and turn it into information and knowledge. Healthelntent Platform applications capture data from internal and external sources and makes it available for incorporation into analytics, reporting, forecasting, and mapping where appropriate.

## CM026 Using claims and/or encounter data

We incorporate data and metrics supporting the evaluation and monitoring of SUDs, including claims and encounter data. Our opioid dashboard is utilized by our current Medicaid clients and uses key attributes such as claims and encounter data, procedure and diagnosis codes, NDC codes, revenue codes, provider eligibility information, and EHR clinical data to identify members at risk and trend improvement over time. We also have measures, as defined by PQRS, NQF and ECQM, focusing on tobacco, alcohol and other drug treatments that enable us to identify common services to reduce substance use.

### CM027 Using prescription data

We incorporate data and metrics that support the evaluation and monitoring of SUDs, including prescription data. Our opioid dashboard is utilized by our current Medicaid clients and uses prescription data to provide insight into prescribing provider patterns, highlight pain management populations, and further stratify members into subgroups based on their prescribed morphine milligram equivalents (MMEs) per day and day's supply—relative to the



Center for Disease Control's guidelines. We also stratify providers to identify prescribing volume trends and provider/member historical relationships.

# CM028 Using Prescription Drug Monitoring Program data

The HealtheIntent Platform has significant flexibility in data ingestion and the ability to receive data as allowed by statutes, including prescription drug monitoring program (PDMP) data. We can leverage PDMP to get a more holistic picture of those members who are receiving prescription drugs that are being monitored and which members are paying with cash and not submitting through insurance.

We have extensive experience pulling in prescription information from a wide variety of systems in addition to claims, such as HIEs, EHRs, direct pharmacy data feeds, etc. These same models can be utilized to pull in PDMP data and efficiently utilize that data in a wide variety of analysis. Data elements we can leverage from PDMP data includes prescriptions paid for in cash; scripts that pre-date Medicaid enrollment, denied dispense requests.

# CM029 Using public health registries

Cerner has extensive experience in public health data. We also submit the data for numerous clients across the country, including four large hospitals in West Virginia, where we are packaging the data and submitting it to their public health registries.

We utilize and contribute to registries on a wide variety of topics, e.g., cardiology, cancer, syndromic surveillance, electronic lab reporting. This type of data can supplement the other data sources DHHR would like to onboard. Additionally, this data is often used to evaluate quality and efficiency measures related to the focus of that registry. Those measures are used as part of the analytics to track everything from flu outbreak to quality of specialized care.

# CM030 Using public health syndromic surveillance data

Cerner has extensive experience in bringing in and understanding public health syndromic surveillance data. We not only package the data but also submit it to state health departments for our clients—so we receive from both sides. We have hundreds of clients submitting this data, including clients in West Virginia.

# CM031 Using vital statistics data

We have significant experience helping our clients identify and maximize data from disparate sources and turn it into information and knowledge. Vital statistics data has the potential to provide a wealth of critical information, especially in the context of managing the opioid epidemic. For example, we are actively working with existing clients to overcome various legal obstacles surrounding the sharing of vital statistics data because they need more accurate counts of overdose events and especially overdose deaths. We load this information and incorporate the data that identifies the portion of the population most at risk for addiction and overdose. The ability to include vital statistics provides visibility into members who may have experienced an overdose. We know the solution to many of these challenges and can incorporate birth and death data records to track members. We also provide data governance that suggests different security levels to limit access to this data based on role and privileges in accordance with the Vital Statistics governance.



CM032

Using enrollment data

The HealtheIntent Platform supports the ability to combine member eligibility/enrollment, claims, clinical and other data to conduct analysis around prescribing patterns, drug utilization, and potential substance use disorders. An example of this is our opioid dashboard, currently utilized by our current Medicaid clients, allowing them to identify the portion of their population most at risk for addiction and overdose.

CM033

Using data from West Virginia Health Information Network (WVHIN)

We currently connect with CRISP and understand the CRISP standards. We are sending, receiving, and reconciling CCD documents between WVHIN and CRISP. We will leverage this expertise to quickly connect it for DHHR and bring in applicable data relating to SUD visits. For example, when members visit a variety of different health systems in an attempt to obtain medications for SUDs, access to that data will provide additional insights to understand behavior and identify different ways to better care for those individuals.

Cerner has been a voice for interoperability in health care and has extensive experience working with HIEs. The Platform accepts data from virtually any source and format, including clinical, financial, and operational sources. We use a various standard interface or transaction technologies to discretely connect source systems to the Platform, including HL7, EDI, SFTP, and CCD.

CM034

Using Emergency Department Information Exchange (EDIE), and/or event notification data

We incorporate data from the EDIE for reporting and analysis. For example, substance abuse individuals may visit emergency rooms in a variety of different physical locations and having this data from the exchange will help us better understand where they are receiving care and how to better care for them. These sources provide data more quickly so that if a spike in volume occurs, it is analyzed and addressed in a timelier manner resulting in faster care and reduced negative outcomes.

**CM035** 

Using other data as defined by the Department

Our opioid dashboard looks at other various factors including the administration of NARCAN, identifying the distance between ED visits and EMS locations and the drive times associated; the outcomes of those ED visits; and pairs data with vital statistics to provide a more holistic picture of actual opioid overdose statistics. We also onboard Department of Justice data to help identify homelessness trends and possible outcome improvements related to SUDs.

Our standard data model covers an extensive data set. As part of our implementation strategy, we conduct strategy sessions to understand your needs, recommend best practices based on our experience, and work with you to refine the approach based upon your feedback.

CM036

The solution should have the ability to generate reports on capitation payment by eligibility group and rate code.

We are working with one of our Medicaid clients to create dashboards around payment comparison of the total capitation payments the state makes to the MCOs versus the total payments MCOs have reported on their paid encounter claims (payments to providers). We have experience using eligibility groups and rate codes, coupled with performance data, to calculate performance-based incentive payments to participating providers. We leverage risk scores to calculate how much a population "should" cost and then compare against their actual



costs. As part of our implementation strategy, we conduct strategy sessions (including with our Data Science team), recommend best practices based on our experience, and work with you to refine the approach, if needed, based upon your feedback.

CM037

The solution should have the ability to capture information on contracted Managed Care Organizations (MCOs) including, but not limited to:

We capture information on contracted MCOs and incorporate that data to improve care, outcomes, and cost. This data is received from the core MMIS system and direct from MCO's.

CM038

Geographic areas served

The HealtheIntent Platform features geographic information system (GIS) and interactive visual mapping technologies. The application supports the presentation of data associated with geographic indicators (GI) by state, county, and zip code plus four, or specific latitude and longitude coordinates and can store these GIs from DHHR's source systems and allow users to use them in their queries or maps. These geospatial capabilities allow DHHR to know where people are, where various providers are, how far apart different services are, and can be used to answer endless questions about access to care.

Cerner goes further to support multi-dimensional visualization capabilities linking geographic information to items such as provider access, health conditions, and diagnoses, with the ability to cross reference different types of data. For example, if a geographic region is identified as not well served by a specialist, we can cross reference that data with members living in that region who had procedures that would typically be served by that specialist. This allows us to determine where they are receiving care and compare their outcomes to people that had care performed in the area.

CM039

Capitation rates

We support the ability to capture and calculate spending per person and per period of time to historically analyze how capitated rates compare to the cost of service delivered and use of information to evaluate changes in capitation rates and/or changes in new rate codes. We can also compare total capitation payments the state makes to the MCOs versus the total payments MCOs have reported on their paid encounter claims (payments to providers).

CM040

The solution should have the ability to produce managed care program reports including, but not limited to:

We support the ability to capture and analyze managed care program data. We have experience working with our Medicaid clients to create dashboards around MCO performance to compare each MCO to another in terms of:

- How they are meeting clinical guidelines/recommendations (e.g., Maternal Wellness –
  ensuring mothers have regular prenatal visits, receive recommended immunizations, receive
  routine urinary tract infection screenings throughout pregnancy, Group Strep B prophylaxis
  when needed, Rhogam Administration when needed, and others)
- Payment comparison of the total capitation payments the state makes to the MCOs versus the total payments MCOs have reported on their paid encounter claims (payments to providers)
- Top diagnoses and procedures providers are billing for (broken out by MCO to see any trends and guide in-program changes, e.g., incorporating episodes of care)



- Breakdown of the categories of service by percent of total spend (broken down by MCO)
  - Including capturing utilization (per 1,000 members) by these categories and cost per member per month
- Break out the following measures by MCO and trend overtime:
  - Avoidable ED spending (leveraging NYU algorithm)
  - Home and Community Based Service Utilization by Waiver members (to capture waiver members that are leveraging HCBS services)
  - Medical Service Utilization by Waiver Members (to capture waiver members that are leveraging medical services)

As part of our implementation strategy, we will conduct strategy sessions, recommend best practices based on our experience, and work with you to refine the approach based upon your feedback.

### CM041 Category of service

Yes. Please refer to our response to requirement CM040.

### CM042 Category of eligibility

The ability to capture eligibility is an inherent core part of our data model that we have populated for every Medicaid client. We can determine overall Medicaid eligibility as well as specific programs connected to an individual member. That data is used to understand performance by those different groups and subgroups about any of the topics discussed in CM040 above.

### CM043 Provider type and/or specialty

The ability to capture provider type and specialty is an inherent core piece of our data model that we have populated in every Medicaid client captured by MCO. Users roll up spend and utilization by provider type to determine where care is taking place and the type of providers involved in that care. You can also drill deeper to evaluate if a certain specialty is not available in a particular region and the impact that has on outcomes. For example, if a geographical population is commonly prescribed pain medication from a PCP in a particular county, you can you can drill down to see if there are any physical therapists or psychological therapists in the area to determine that a PCP is handling the episode of care for pain instead of a combination of specialties.

### CM044 Other parameters as defined by the Department

The HealtheIntent Platform is very flexible and can incorporate and capture data from many sources. Our standard data model covers an extensive data set. As part of our implementation strategy, we conduct strategy sessions, recommend best practices based on our experience, and work with you to refine the approach based upon your feedback.

### CM045

The solution should have the ability to process encounter data to detect overutilization and underutilization of services by managed care members.

Our clients commonly use MCO data to understand possible over utilization such as Per Member Per Month (PMPM) spend, MRI, Skilled Nursing Facility (SNF), drug, generic drug, IP and ED utilization. We utilize the latest industry knowledge to better understand utilization trends. For example, the Avoidable Emergency Department dashboard provides insight through algorithms identifying ED visits that are "non-emergent" or "primary care treatable". Efforts focused on preventing avoidable utilization are more likely to be effective than less discerning



efforts. Underutilization is identified from MCO data. One common approach is to leverage wellness measures based on industry standards such as the adult and child core sets, as well as new measures we develop in collaboration with our clients. In total, we have over 1,000 out of the box measures and the ability to configure custom measures. Another way to detect over and underutilization is through episode and bundle care analytics. For example, standard content supports all 35 Bundled Payments for Care Improvement Advanced (BCPIA) for CMS innovation. We have designed additional bundles to also leverage data beyond the BCPIA use case based on the needs of our clients. Additionally, our episode management analytics package tracks episode spending and utilization relative to a target and identifies opportunity for utilization reduction across the continuum (e.g., inpatient/outpatient through post-anchor event – 90 days).

## CM046

The solution should have the ability to collect and sort encounter data for use in setting capitation rates.

The HealtheIntent Platform collects and sorts encounter data for use in setting capitation rates. We support the ability to capture encounter data to set capitation rates and to historically analyze how historical rates compared to the actual cost of services delivered and use that information to evaluate new groups and subgroups for possible new capitation rates.

## CM047

The solution should have the ability to identify fee-for-service (FFS) claims submitted for members covered by managed care.

As claims and enrollment information comes into the system, the system applies Cerner's Master Person Matching logic linking all records associated to the same individual. The link is established and the single member has claims from both the FFS population and managed care population for the same time period.

## CM048

The solution should have the ability to use claims and encounter data to identify persons with special health care needs, as specified by the Department.

The HealtheIntent Platform uses claims and encounter data to help your organization identify individuals who may have special health care needs. For example, individuals identified with autism or asthma can be automatically recommended into a specific program of care which may qualify them under a different waiver with additional coverage. In addition to identifying individuals based on a formal diagnosis, we bring in additional data, such as lab results, to identify specific individuals for targeted care. For example, for individuals not yet diagnosed as diabetic but with a lab result of an appropriate A1C or blood glucose level, we identify those individuals for programs that might prevent them from becoming diabetic.

CM049

The solution should have the ability to access and report on encounter data including, but not limited to:

We support the ability to store, access, and report on encounter data, as described below.

#### CM050

Monitor appropriateness of care

We support the ability to report on adherence to clinical guidelines and to identify any gaps, including a summary view of HMO/MCO performance for the HEDIS measures. The dashboard enables you to view measure performance by population, and payer plan, with additional detailed dashboards. We can also identify individuals who are receiving care by a provider at a venue not appropriate to their condition to target them for monitoring of appropriate care. For example, surgery patients not adhering to pre- or post-surgical instructions or therapy, thus



creating a higher cost of care; and maternity patients who are not receiving all the prenatal visits and screenings, thus creating additional risk and higher cost.

CM051 Determine shared member financial responsibility that includes true out-of-pocket costs

We capture data from various sources regarding out of pocket costs that includes both data explicitly provided by the claim, as well as data from non-traditional sources like the PDMP, HIE, and MCO. Data science can be utilized to estimate other types of cost in which we don't have direct data.

CM052 Profile Managed Care Organizations (MCOs) and compare utilization statistics

The HealtheIntent Platform supports a range of analysis to review and compare MCO utilization. This includes standard benchmarking of utilization statistics, quality measures, health care authority data, and any other variable to ascertain relative MCO performance. These standard CMS and nationally recognized benchmarks are preloaded directly within the application and available for use by DHHR for comparison to national averages, regional/state specific averages, and between different MCOs. Additionally, DHHR may implement your own statewide or internally developed benchmarks for use across your member population.

CM053 Other purposes as defined by the Department

The HealtheIntent Platform was designed to be flexible and to integrate data from many sources.

CM054 The solution should have the ability to support analytics of fee-for-service (FFS) claims statistics and encounter data including, but not limited to:

Cerner has developed claims-based analytics related reports, dashboards, and associated metrics. We are highly experienced with encounter data and provide insight regarding the types of data needed to support analytics of FFS claims statistical analyses. The HealtheIntent Platform provides the state, MCOs and providers with actionable insight by providing enhanced data analytics to better inform policy decisions, identify trends, measure, monitor, and independently validate the MCOs performance and adherence to contractual requirements

CM055 Timeliness of care

Cerner captures the data to support analytics of FFS claims statistics and encounter data and can benchmark those against industry quality standards and DHHR specified health outcomes. Our quality measures library includes over 1,000 disease and wellness measures that enable users to quickly determine where care gaps exist and cross-reference that with a variety of different data to close those gaps. Our tools help to ensure that members are receiving the appropriate care for better outcomes in a timely manner. For example:

- We track post-surgical hip-replacement patients to ensure that a follow-up visit takes place within a certain number of days to reduce the risk of re-admission.
- We track immunization information to target specific populations that are not current
- We identify sub-populations that are not receiving preventative care in a timely manner, such as diabetics not receiving an annual foot exam, which may lead to a higher cost of care
- Our opioid dashboard provides a visual that looks at the number of days it takes for an individual to receive opioid use disorder therapy from the day that that they are first diagnosed



CM056 Quality of care

Our experience working with traditional health organization clients and Medicaid clients has resulted in having a data and insights platform with out of the box content immediately available to begin tracking and monitoring quality of care for specific populations and programs. We have more than 1,000 quality measures, such as HEDIS and those required by CMS, supporting the ability to track and monitor outcomes through analytics based on claims date, clinical data, and other non-traditional data. These quality measures are embedded into the Platform and available for DHHR to leverage for operational reporting. Additionally, HealtheRegistries will enable DHHR to leverage clinical and claims data to apply intelligence to track and monitor outcomes, track program effectiveness, and so much more. Next, we can enable DHHR to apply risk scores combined with clinical and claims data.

## CM057 Patient outcomes

Cerner captures the data to support analytics of FFS claims statistics and encounter data and can benchmark those against industry quality standards and DHHR specified health outcomes. Our quality measures library includes over 1,000 disease and wellness measures that enable users to quickly determine where care gaps exist and cross-reference that with a variety of different data to close those gaps. Our tools help to ensure that members are receiving the appropriate care for better outcomes, including preventative care. We can also track the result of care not performed. For example, the lack of foot exams for diabetics resulted in a higher percentage rate of amputations. With our bundled care and reporting, we can identify areas for improvement, including pre-term birth rate, lung function post respiratory infection, asthmatic hospitalization rate, etc.

CM058

The solution should have the ability to receive population health data from various external entities including, but not limited to:

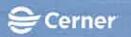
The HealtheIntent Platform captures data from both internal and external entities, such as public health data surveillance data, census data, vital statistics data, and more, and makes it available for incorporation into analytics, reporting, forecasting, and mapping where appropriate. We not only store the data, but we can help you utilize the data for meaningful analysis through Cerner's Master Person Matching logic, standardization, out of the box algorithms, and other mechanisms.

CM059 Public health surveillance data

Cerner has extensive experience in bringing in and understanding public health syndromic surveillance data. We not only package the data; we also submit it to state health departments for our clients—so we know it from both sides. We have hundreds of clients submitting this data, including clients in West Virginia.

CM060 Census data

We incorporate census data and correlate information to various data points. By better understanding the individual and the various data points, we can provide interventions that align for better care. For example, the use of census data may help DHHR understand the follow-up visit rates for post-surgical care in a particular region are low due to the fact that access to vehicles is exceptionally low in that region, and to improve outcomes, it may be beneficial to coordinate taxi service in that region.



CM061

Vital statistics data

We have significant experience helping our clients identify and maximize data from disparate sources and turn that into information and knowledge. Vital statistics data has the potential to provide a wealth of critical information, especially in the context of managing the opioid epidemic. For example, we are actively working with existing clients to overcome various legal hurdles surrounding the sharing of vital statistics data because they need more accurate counts of overdose events and especially overdose deaths.

The opioid dashboard is utilized by our current Medicaid clients to identify and calculate current levels of opioid overdoses and overdose deaths purely from claims and clinical data, but we understand that many of the individuals who suffer an overdose event never make it to a healthcare facility, so this outcome goes unrecorded in traditional healthcare data. Our opioid dashboard looks at other various factors, including the administration of NARCAN, identifying the distance between ED visits and EMS locations and the drive times associated, the outcomes of those ED visits, and pairs that data with vital statistics to provide a more holistic picture of actual opioid overdose statistics. We also onboard Department of Justice data to help identify homelessness trends and outcome improvements related to SUDs.

We can easily load this information and incorporate the data that identifies the portion of the population most at risk for addiction and overdose. The ability to include vital statistics provides visibility into members who may have had an overdose. We know the solution to many of these challenges and can incorporate birth and death data records to track members as well as provide data governance that suggests different security levels to limit access to this data based on role and privileges in accordance with the Vital Statistics governance.

#### CM062

Others as defined by the Department

The HealtheIntent Platform can receive data from virtually any system, including clinical, financial, and claims data. As data is extracted from a source system, it is processed by our solution and then goes through a series of transformation processes where it is mapped, standardized, normalized, and reconciled at a person-level into the unified, structured data set.

CM063

The solution should have the ability to interface with data sources necessary to support analytics and report on social determinants of health.

We have social determinants preloaded in the system (e.g. environment, social and economic factors, clinical health and care, human behavior, and specific identified factors such as tobacco use, lead poisoning, housing, transportation, census data) and the ability to ingest virtually anything. We have experience using that data, such as identifying who needs transportation services and coordinating those services.

For our Healthy Nevada project, we incorporated social determinants of health to help improve the health behavior of the Nevada, Missouri community by 45%. In 2012, Nevada was ranked 88 out of 115 on the Missouri county health ranking list due to factors such as a high rate of smoking and adult obesity, physical inactivity, and poor mental health days. We were able to help Nevada implement social determinants of health innovations to make it easier for individuals to engage in healthy behavior during their daily routines. More than 100 innovations were implemented to impact social determinants of health, reaching 70% of the population across the county. Nevada's county health ranking scores improved by 24% for health outcomes (including longevity and quality of life), and by 45% for health behaviors (including diet, exercise, and tobacco use). The HealtheIntent Platform can help DHHR quickly and



effectively analyze data to make informed decisions. This is achieved by providing impactful results using clinical quality and social determinants of health metrics adhering to evidence-based and national standards, risk scoring/stratification, normative comparisons, and other methods which add value to the underlying data, including predictive modeling.

CM064

The solution should have the ability to support analytics of population health data to develop health improvement communication materials including, but not limited to:

The HealtheIntent Platform is comprised of embedded industry leading business intelligence tools, SAP BusinessObjects and Tableau with outputs that are presentation ready and include numerous options to explore data graphically as well as apply analytical processing and targeted logic. These tools can help DHHR analyze the data and identify members who may benefit from additional communication. Once a sub-population is identified for communication, that data is used in several different ways, such as a physical mailing campaign based on a list that came from the Platform, an email mailing campaign directly executed within the Platform, or even an advertising campaign such as billboard or school messaging. This same targeted logic can be applied to identify providers and/or provider groups who are not prescribing within the guidelines. This information can then be used to create education and awareness for certain providers or groups of providers.

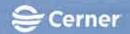
CM065 Campaigns to enroll new members in existing programs

With the inclusion of non-traditional healthcare data sources such as SNAP, TANF, and WIC, our HealtheAnalytics application and master person matching in HealtheIntent can identify Medicaid recipients who are likely eligible for additional services that directly impact their health such as SNAP, TANF, and WIC. For example, Cerner is currently working with the state of Montana in combining housing shelter data sources with traditional MMIS data sources to identify Medicaid members who have not received housing assistance despite having an address associated with temporary housing units. Care managers and case workers will receive a list of Medicaid members who are likely to need proactive services to prevent housing instability, thus avoiding the costly negative spiral associated with homelessness. Additionally, HealtheDataLab was leveraged to build a predictive model that estimates the risk of housing instability for each Medicaid member, going beyond simple logic of a street address, and incorporating behavioral health diagnoses, census tract-level data, emergency department and inpatient utilization data, and more to provide a more accurate assessment of a member's potential housing needs.

CM066 Ne

New programs and services

HealtheDataLab can support analytics related to the development of new programs and services through advanced analytical tools. One of the primary challenges with assessing and projecting outcomes for new programs and services is that there typically is not any historical data to rely on to establish patterns that would impact the desired outcomes. As such, HealtheDataLab can support analytics such as simulations that incorporate available evidence on the effectiveness of targeted programs and services, outcomes, consequences, and costs. If available evidence does not exist for important factors, then DHHR users can incorporate their own assumptions regarding what they think will occur if the new program or service is implemented. By building a simulated population that closely reflects your existing population and establishing rules across the various factors that are deemed important, HealtheDataLab can simulate this complex network of interactions and provide an output that estimates the likelihood of targeted outcomes, unintended consequences, and costs. This information can



then be synthesized into a waiver application, such as to improve the likelihood of CMS approval as it would provide our best guess at improved outcomes and reduced future costs.

## CM067 Updated benefits/reference information

We have granular tracking to identify exactly which program participants are enrolled in which program. We can create lists of individuals in those programs including email addresses, phone numbers, and other contact information, which can be used to reach out to those individuals. For example, we can identify members who have been enrolled in a particular program for an extended length of time who may now have additional options not previously covered, such as physical therapy services, or substance use behavioral health related services, etc.

CM068 Others as defined by the Department during Design, Development and Implementation (DDI)

The HealtheIntent Platform is very flexible and is designed to easily integrate multiple data sources. As such, our standard data model includes an extensive list of details.

CM069 The solution should have the ability to capture each Managed Care Organizations' (MCOs') provider data including, but not limited to:

The ability to capture each MCOs provider data is an inherent core piece of our data model that we have populated in every Medicaid client.

CM070 Provider identification (ID) number

Provider identification number is captured as a core piece of our data model.

CM071 Provider type

Provider type is captured as a core piece of our data model.

CM073 Provider affiliation

We support the ability to ingest data and drive additional affiliations based on analytic use cases. For example, we can identify multiple member/provider relationships across care, such as primary care, specialty care, bundle specific affiliation, and others.

CM074 Provider physical address

Provider physical address is captured as a core piece of our data model.

CM075 Provider mailing address

Provider mailing address is captured as a core piece of our data model.

CM076 Others as defined by the Department

The HealtheIntent Platform is very flexible and able to incorporate and capture data from many sources. Our standard data model covers an extensive list of details. As part of our implementation strategy, we will conduct strategy sessions to understand your needs, recommend best practices based on our experience, and work with you to refine the approach based upon your feedback.



## 2. FINANCIAL MANAGEMENT

Refer to the relevant business specifications located in *Appendix 1: Detailed Specifications* and pertinent narrative in *Section 4: Project Specifications* in this RFP to cover solution capabilities in this area. The Vendor should describe its approach to Financial Management below. The narrative response for this category should be organized using the appropriate subject matter area as per *Appendix 1: Detailed Specifications*.

The HealtheIntent Platform is a comprehensive solution that includes summarized data to identify trends, predict future behavior, and apply industry standards for maximum interoperability. We support program management, financial management, policy and budget formulation, clinical outcomes, forecasting, programmatic monitoring, and trend analysis. Our application provides the ability to incorporate data from various external systems and export that data to improve spending and care. Cerner will assist DHHR in tracking spending, identify opportunities for cost control (e.g., via claims processing errors and double billing/payment), and help forecast your budget. With Cerner, DHHR will have access to a powerful, modern, and flexible data warehouse. You can receive data from traditional and non-traditional data sources, leveraging over 1,000 unique connections. Cerner maps proprietary data to 252 standard terminologies and has approximately 7 million standard terminology codes grouped. You will benefit from our experts' significant experience in helping clients to maximize data from disparate sources and transform that data into actionable outcomes.

The HealtheIntent Platform uses the most accurate available data to produce DHHR-specific and federally mandated reports, including CMS-21, CMS-37, CMS-64, CMS-416, and T-MSIS. HealtheIntent Platform applications feature built-in template queries and reports designed specifically for State Medicaid Agencies. Cerner continuously updates and improves these reports based on client suggestions and changes in regulatory requirements and health care agencies best practices. Most reports and templates built for other clients are available to all clients.

FM001

The solution should have the ability to obtain various listings of the procedure, diagnosis, and preferred drug list (PDL) files.

Our standard data model includes the ability to obtain various listings of the procedure, diagnosis, and PDL files. Cerner leverages and maintains custom lists of procedures, diagnoses, drugs, and other elements to join with disparate data sources in reporting efforts. Data sets are created and maintained within the HealtheIntent Platform and are accessible in our applications for all reporting efforts. We support approximately 7 million standard terminology codes that are maintained within the system so that data can be compared for a wide variety of use cases. We are committed to updating these as the latest terminology versions are made available. In total, over 1,000 coding systems are maintained including large standards such as SNOMED CT, NDC, LOINC, ICD 10, HL7 and FHIR. Maintaining these standards is critical to Cerner's success if analyzing non-claims data.

FM002

The solution should have the ability to support analytics and reporting on claims processing errors including, but not limited to:

Typically, the claims processing source provides details such as missing data and error codes. Our application can address common issues in claims administration and processing, including:



- Identifying a broad approach to correcting common billing errors across the state
- Identifying that a service is being upcoded for a particular diagnosis,
- Identifying opportunities to utilize bundles
- Evaluating the effectiveness of bundles

Users generate reports that identify and analyze processing errors to determine how often claims are denied and why, as well as identify trends in common claims submission errors (incorrect member or provider data, insufficient coverage, invalid or incorrect ICD or CPT codes, lack of medical necessity, etc.).

#### FM003

#### Frequency

Typically, the claims processing source provides details of claim submissions from which frequency details can be derived. Our application can be used to address common issues in claims administration and processing. Our clients often explore frequency with reports that identify and analyze processing errors to determine how often claims are denied and why, as well as identify trends in common claims submission errors (incorrect member or provider data, insufficient coverage, invalid or incorrect ICD or CPT codes, lack of medical necessity, etc.). Reporting can leverage all applicable fields that are captured in claims processing, including all applicable date fields, provider types, specialties, and roles.

#### FM004

#### Extent and type of provider

Typically, the claims processing engine provides the extent and type of provider. Our application can be used to address common issues in the claim's administration and processing processes. Users generate reports that identify and analyze processing errors to determine how often claims are denied and why, as well as identify trends in common claims submission errors (incorrect member or provider data, insufficient coverage, invalid or incorrect ICD or CPT codes, lack of medical necessity, etc.). Reporting can leverage all applicable fields that are captured in claims processing, including all applicable date fields, provider types, specialties, and roles.

#### FM005

#### Others as defined by the Department

If DHHR has the need to run additional analysis, we will work with data science to drive those rules. This includes the ability to add new rules for claims processing, analyze historical claims against those rules to determine different outcomes for a particular collection of claims if those rules had been applied, analyze trends in reasons claims are adjusted, etc.

#### FM006

The solution should have the ability to report based online and subline categories to all claim line details that correspond to the CMS-21 report.

We provide a granular claim header and claim line item detail to be used for many use cases, including federal reports. Our application produces many CMS reports, including CMS-21. All line and subline categories for CMS-21 are included, such as Outreach category with subline categories of Increased Outreach and Enrollment of Indians and Increase Outreach and Enrollment of Children Through Premium Subsidies. The application provides the ability to store, retrieve, modify, and execute queries on a scheduled or ad-hoc basis and allow all reports to be executed at various time intervals (e.g. daily, weekly, monthly, quarterly). These reports are designed so that the output directly matches the format required by CMS so they can be delivered without any manual reformatting.



FM007

The solution should have the ability to report based online and subline categories to all claim line details that correspond to the CMS-64 report.

We provide a granular claim header and claim line item detail to be used for many use cases, including federal reports. Our application produces many CMS reports, including CMS-64. All line and subline categories for CMS-64 are included, such as Outpatient Hospital Services category with subline categories of Regular Payments and Supplemental Payments. The application provides the ability to store, retrieve, modify, and execute queries on a scheduled or ad-hoc basis and allow all reports to be executed at various time intervals (e.g., daily, weekly, monthly, quarterly). These reports are designed so that the output directly matches the format required by CMS so they can be delivered without any manual reformatting.

FM008

The solution should have the ability to provide data for budgeting, forecasting, and rate analysis for all benefits, benefit types, and eligibility groups.

The HealtheIntent Platform includes a SaaS spend forecasting algorithm that is based on academic research and our experience analyzing claims data. This algorithm includes over 700 variables to predict your budgetary needs for the next fiscal year based on historical trends, accounting for chronic conditions, other clinical classifications (e.g., acute versus chronic episodes of care and recent member-level utilization trends). In one use case, for example, our algorithm distinguishes between a member whose cost has consistently increased over the past six months versus a member whose cost spiked for a single month, then returned to baseline due to an acute event. During implementation, our data science team will work in good faith with DHHR to configure this algorithm to meet your needs. We can partition your population into different benefit types, eligibility groups, MCOs, and other categories, re-run the algorithm, and produce predictions by the desired partitioning logic.

In addition to our SaaS spend forecasting algorithm, DHHR users can perform their own rate analysis, forecasting, and budgeting analyses through the Platform by leveraging analytics and data science tools in HealtheAnalytics and HealtheDataLab, respectively. Finally, Cerner offers both analytics and data science services to help support customized analytic efforts on an asneeded basis in which we will work in good faith with DHHR to understand your financial management needs.

FM009

The solution should have the ability to support data modeling and to import to and export from other software solutions.

The HealtheIntent Platform can incorporate and export data by a variety of methods. We provide human expertise to accurately and efficiently bring data into the HealtheIntent Platform, leveraging knowledge across our entire client base. The Platform includes predefined use cases, along with the tools for DHHR to load sets of data to support a wide range of unique use cases. We provide a highly flexible means to structure data around use cases, leveraging industry leading business intelligence and data discovery tools to analyze data sets. The HealtheIntent Platform shares information via open application programming interfaces (API), enabling information sharing across multiple systems. We offer both data export functionality via secure HTTP; as well as Data Syndication, which allows users to interact with open APIs to pull data at runtime and load data into another system outside of Cerner's cloud hosted system.

FM010

The solution should be populated with data as defined by the Department during Design, Development, and Implementation (DDI).

Our sol will load the data sources as agreed upon per the finalized plan, scope, and budgetary quote. Our recommendation during DDI is to use real production data as early as is practical so



that testing can be as accurate as possible, including all environments. We will work with DHHR to determine those timelines based upon the capabilities of the source systems. With our data load templates, we load data into the Platform faster, leverage data quality applications to better understand it, and accurately map the collected data. For example, if a data source sends proprietary values, we map these to industry standards (e.g., HL7). These templates draw from our experience with source versions including MCO, HIE, SDOH, EHR (and many additional vendors).

FM011

The solution should have ability to provide data for rate-setting analysis applicable to all provider types and member benefits.

Cerner supports the ability to capture and calculate spending per person and per time period, including the ability to group that spend into rate cells and risk categories. For example, this grouping enables you to evaluate actual spend verses expected spend. This also allows us to identify member outliers within a group, which may inform rate cell creation and setting, or even justify the need for a new waiver program to cover high-risk populations with specific healthcare needs.

FM012

The solution should have the ability to add attachments at the detail level of the budget using software applications defined by the Department including, but not limited to:

We support the ability to export data in the formats listed below. Additionally, our reporting and analytics applications deliver robust functionality that supports direct querying, data modeling, on demand queries, reports, and visualizations. These tools have fast and easy access to all tables and data marts at the query and reporting levels and feature drill-down capabilities for summary reports to the lowest component on the report.

FM013

Microsoft Word

The HealtheIntent Platform reporting application and tools provide the ability to generate user reports in a variety of formats, including but not limited to Word, Excel, PDF, HTML and GUI. The Platform's reporting tools allow for ease of use and feature drill-down capabilities for summary reports to the lowest component on the report.

FM014

Microsoft Excel

The HealtheIntent Platform reporting application and tools provide the ability to generate user reports in a variety of formats, including Word, Excel, PDF, HTML and GUI. The Platform's reporting tools allow for ease of use features drill-down capabilities for summary reports to the lowest component on the report.

FM015

Portable Document Format (PDF)

The HealtheIntent Platform reporting application and tools provide the ability to generate user reports in a variety of formats, including Word, Excel, PDF, HTML and GUI. The Platform's reporting tools allow for ease of use features drill-down capabilities for summary reports to the lowest component on the report.

FM016

Others as defined by the Department

We are committed to continuing to change these output formats as other standards become commonly used across the industry. We embed industry-leading business intelligence tools, SAP BusinessObjects and Tableau. HealtheEDW enables users to visualize and analyze data, create workbooks, visualizations, dashboards, and stories. It supports data discovery and



graphical and geographical reporting. Our standard and custom report dashboards provide a face up view related to analytic focuses with the ability to drill down for more information. SAP BusinessObjects and Tableau provide outputs that are presentation ready and include numerous options to explore data graphically and to apply analytical processing.

FM017

The solution should have the ability to provide ad hoc reporting that allows authorized solution user flexibility definitions, and it should have the ability to encompass the Department's reporting needs.

HealtheAnalytics and HealtheEDW capabilities enable Medicaid insights through structured, use-case focused analytic experiences, as well as ad hoc reporting capabilities. We provide actionable, organized views of the data through analytic visualization tools, key performance indicators, standard turn-key content, and enterprise data warehouse tools. Users can also build and customize their own reports on an as-needed basis. Users can access the drag-and-drop user interface of Tableau and BusinessObjects or create direct SQL queries. The ad hoc interface allows the end user to create the labels, filters, calculations, data format, and define all aspects of the report and the data in the reports. These ad hoc reports can be saved and published to share with other authorized users. More sophisticated embedded tools include our data science application, HealtheDataLab. Users can perform quantitative analysis, create use-case specific data models, and conduct advanced statistical analysis using open source data science tools. HealtheDataLab offers a more streamlined and research-friendly approach to both de-identified and identified data.

FM018

The solution should have the ability to report across all Medicaid and Social Service payments regardless of service delivery method and financing mechanism including, but not limited to, the use of a master data management system or function.

Cerner provides a flexible system to aggregate and analyze an extensive amount of data, including disparate data. Examples include TANF, SNAP, WIC, homelessness status, housing assistance data, and criminal justice. Data from all sources use Cerner's Master Person Matching logic to reconcile records from different sources that refer to the same individual and uses the member's longitudinal record to fully understand the characteristics of the member.

FM019

The solution should provide the ability to organize reports based on member enrollment and eligibility criteria.

Our standard data model supports enrollment and eligibility data with the ability to crossreference that with other data from the same source or other sources, e.g., waiver reporting, policy analysis for different eligibility categories, budgeting, and more.

FM020

The solution should have the ability to capture data necessary to perform actuarial services and analyses.

Any relevant data can be onboarded and served up in a data model and accessed in our HealtheDataLab or HealtheAnalytics to perform actuarial services and related analyses. We will expose all data to the actuaries in the reporting layer, the data science layer, and the data export layer. We provide full functionality to export and model the data based on actuarial best practices.

#### 3. PROGRAM MANAGEMENT

Refer to the relevant business specifications located in *Appendix 1: Detailed*Specifications and pertinent narrative in Section 4: Project Specifications in this RFP to



cover solution capabilities in this area. The Vendor should describe its approach to Program Management below. The narrative response for this category should be organized using the appropriate subject matter area as per *Appendix 1: Detailed Specifications*.

The HealtheIntent Platform enables DHHR to analyze data for informed program management decisions. It provides predictive modeling for more impactful results using clinical, quality, and social determinants of health metrics. Our solution adheres to evidence-based and national standards, risk scoring/stratification, normative comparisons, and other methods that add value to underlying data. Our HealtheDataLab, an application of the HealtheIntent Platform, provides multi-level statistical modeling techniques to assist with case mix adjustments.

This ability to assess variation in risk under each Managed Care Organization (MCO) allows the Department to better assess MCO performance and establish a more equitable playing field for those serving riskier populations. We envision a solution that supports West Virginia in driving change for the programs delivered to its Medicaid members state agencies with modernized capabilities in a single data analytics Platform. Through services, tools, and unique data constructs inclusive of multiple data types, the HealtheIntent Platform applications will help the Department shift to a proactive management model lending itself to deep, contextual insight on the key challenges West Virginians face providing a stage for action to improve member outcomes. We provide standard best practice content which can be modified, along with included tools enabling Cerner content, on a variety of topics, to be personalized to create specific reports, ad hoc data models, calculations, and more. Additionally, our solution empowers DHHR to create content independent of our included content. The effective management, tracking, monitoring, and control of the West Virginia program management, project scope, schedule, and resources rely upon our flexible, collaborative, and disciplined approach to program management.

HealtheAnalytics and HealtheDataLab allow end users to perform in-depth analysis of care

delivery. Our users can perform the simplest tasks to the most complex data analytics with our complete package. The Platform includes a library of quality measures (e.g., the Adult and Child Core Set). These measures provide a higher degree of accuracy and quality assurance thanks in part to EHR and HIE data and our years of experience with 173 client sites. This additional clinical data provides a more complete picture of members and assists in visualizing those members and their gaps in care. Using our included HealtheAnalytics application, users manage their population, evaluate clinical care, and identify those members in needed of more focused care. Additionally, our quality measures library, which includes over 1,000 measures and reports for both disease-specific and

## **DHHR Benefits - Actionable Insights**

- Cerner's Healtheintent Platform supports innovative, data-driven, and collaborative decision-making.
- Our tools allow for data visualization, advanced analytics, and self-service data access.
- DHHR can access data in a central location in order to meet reporting mandates, rather than pulling data from multiple sources.

wellness measures, enables users to quickly identify care gaps and close these gaps with a variety of embedded tools.

Our HealtheAnalytics application allows users to capture data from both internal and external entities, including behavioral health, public health, surveillance, census, and vital statistics. This allows incorporation of data into analytics, reporting, forecasting, and mapping where



appropriate. Users leverage HealtheAnalytics to consume, process, and normalize data, and then disseminate the results for wider use in process change and decision making. We support analysis actions for providers, including analysis of utilization, gaps in care, PMPM, quality measures, performance measures, and high cost events. As a part of this analysis, DHHR can perform rate setting calculations to track spending change over time. Additionally, we provide content developed by our current Medicaid partners, commercial health plans, employers, and public health systems. Cerner brings to the Department significant experience both in health care and in West Virginia. In addition to the power and flexibility of the HealtheAnalytics application itself, we offer the expertise and experience gained from our forty years in this field.

# PG001 The solution should support a range of analysis actions including, but not limited to:

The functionality of HealtheDataLab spans many analytics techniques. A given user can conduct a simple member count within a program, while another user could conduct a case-mix adjustment to fine-tune a performance-based payment measure. Other analyses include benefit modeling, clinical review, utilization management, provider member MCO profiling, program planning, forecasting, machine learning, program assessment, provider or contractor performance, quality assurance, fraud, waste, and abuse detection, and comparison of fee-for-service and managed care. DHHR will enjoy more robust reporting capabilities in our solution. Providing over 1,000 customizable reports is easily accomplished with HealtheIntent Platform. These reports can run automatically or be exported into excel for further manipulation. We provide robust departmental reporting through an intuitive central repository reporting portal. Users can run reports by simply selecting the individual pre-defined report and perform additional analysis via filtering and graphing options. In addition, users can create ad-hoc reports as needed.

## PG002 Benefit modeling

Cerner HealtheDataLab provides the functionality to allow a user to create policy simulations that can address how changes in benefit plans will impact their population, as well as calculate potential financial implications over time. Users can create benchmarks and KPIs in HealtheAnalytics to track progress and identify early signs of issues and areas for further improvement or adjustments. Additionally, HealtheAnalytics can be used for benefit modeling and review of historical data. For example, if DHHR plans to change a particular set of benefits, users could review the member populations the change will affect. Alternatively, if DHHR ceased coverage of a service, users could determine how many beneficiaries made use of the service and how that change may have affected them. Our HealtheDataLab also handles more complex simulations, including modeling the addition of a new service to help identify users who would seek those services.

## PG003 Clinical review

The HealtheIntent Platform supports the analyses and review of clinical actions provided, to see care was consistent with guidelines and to identifying any gaps in care. With our HealtheAnalytics application, DHHR can create reports to review clinical information within their population with the ability to further explore specific members based on specific quality measures. The Platform ingests traditional claim data, EHR/HIE data, and additional clinical data that gives a full picture of the member, assisting in visualizing those members with gaps in care. Utilizing our included HealtheAnalytics application, users manage their population, evaluate clinical care, and identify those members who might otherwise fall through the gaps. One mechanism that facilitates this is our library of over 1,000 quality measures based on industry leading measures and clinical quality and outcomes such as the Adult and Child Core



Set measures and others that enable your users to quickly determine where care gaps exist and cross-reference that with a variety of different data to close those gaps.

## PG004 Utilization management

HealtheAnalytics provides the capability to identify services that are under or over utilized resulting in high cost care or gaps in care. By identifying services, where the rate is abnormally high our clients can use the tool to research why the costs were high, or gaps occurred. We provide a library of utilization measures such as ED utilization, inpatient stays, readmission, and PMPM costs. We also have advanced measures such as risk scoring and avoidable emergency department (ED) visit identification. These metrics will help DHHR to quantify utilization and provide the ability to drill down to identify avoidable ED information in which alternative or preventative care was appropriate. This could, for example, reduce unnecessary utilization, which may result in a reduction of cost of care for the member.

## PG005 Provider-member-Managed Care Organization (MCO) profiling

Cerner supports analytics for profiling utilization, spend, and quality measures, and comparing one organization's performance measures against another's. This data can be aggregated and analyzed at the member level, the provider level, as well as at the MCO level or other aggregations so DHHR can evaluate relative performance. In addition to standard dashboards, we provide the ability for DHHR to create ad-hoc reports based upon the same underlying metrics. HealtheDataLab allows DHHR to use statistical techniques, such as multi-level modeling to perform case-mix adjustments that assess the variation in risk across each MCO allowing for a more accurate assessment of performance.

## PG006 Program planning

HealtheDataLab provides cutting-edge statistical and data science capabilities to forecast future outcomes and events, as well as run simulations to better understand potential outcomes under a variety of scenarios when historical data is not available. For example, research suggests physical therapy and psychological therapy can help alleviate chronic pain without relying upon opioid medication. However, it may be the case that these services are not covered for individuals with chronic pain. To understand whether the department would realize a return on investment by covering these services, we can simulate your population, build evidence-based rules guiding important interactions and efficacy rates and simulate the expected cost and health outcomes for your chronic pain population. This analytics technique is sometimes referred to as a microsimulation and can provide valuable information when making decisions about novel programs to create and submitting CMS waiver requests to gain funding for programs.

#### PG007 Forecasting

We understand the importance of accurate budget forecasting in running a successful Medicaid program. This is why Cerner offers a SaaS spend forecasting algorithm to aid Medicaid departments in requesting funding levels each fiscal year. We also recognize that forecasting and machine learning are still fairly new to the world of health care, and there are likely many as of yet unidentified problems for which forecasting would provide value. As such, Cerner offers a data science application, HealtheDataLab, to provide users with access to EDS data, train and test forecasting models, and deploy these models back out to the HealtheIntent Platform to be used in reporting. Finally, Cerner recognizes that a unique skillset is required to develop a forecasting model and resources with these skillsets are frequently in short supply. Therefore,



our data science team will work in good faith with DHHR to develop custom forecasting models as needed throughout the life of the contract.

## PG008 Program assessment

Our solution evaluates key performance metrics and monitors trends over time. Additionally, we assess and evaluate complex program details to determine why certain programs are not doing well. Through a more sophisticated data science analysis, we help identify what factors lead to poor outcomes and how they can be improved. Focusing on KPIs and benchmarking, Cerner provides the capabilities to assess current programs and track the potential success of the programs. Our analytics application, HealtheAnalytics, allows users to manage their population, evaluate clinical care, and identify those members who might otherwise fall through the gaps. One mechanism that facilitates this is our library of over 1,000 quality measures that are based on industry leading measures and clinical outcomes such as the Adult and Child Core Set measures. These measures enable your users to quickly determine where care gaps exist and cross-reference that with a variety of different data to close those gaps.

## PG009 Provider or contractor performance

Cerner supports analytics for providers or contractors, including analysis of utilization, gaps in care, PMPM, quality measures, performance measures, high cost events, and Adult and Child Core Set measures. As a part of the analysis, DHHR can perform rate setting calculations as well as review how spending has changed over time. HealtheDataLab allows DHHR to use statistical techniques, such as multi-level modeling, to perform case-mix adjustments that assess the variation in risk across each MCO. This type of analysis allows for a more accurate assessment of performance.

## PG010 Quality assurance

The HealtheIntent Platform includes numerous quality measures. These measures provide a higher degree of accuracy and quality assurance when we include EHR and HIE data into the Platform based upon our experience at 173 different client sites. This additional clinical data provides a more complete picture of each member and assists in visualizing those members' gaps in care. Utilizing our HealtheAnalytics application, users manage their population, evaluate clinical care, and identify those members who might otherwise fall through the gaps. Additionally, our quality measures library, which includes over 1,000 measures for both disease specific measures as well as wellness measures, enables your users to quickly determine where care gaps exist and cross-reference that with a variety of different data to close those gaps. Cerner provides many initiatives to hold providers accountable for managing specific diseases such as evaluating pre-diabetics based on incorporated laboratory results from the EHR. This quality measure includes which of those members maintain a controlled blood sugar and which become diabetic.

Another indicator of quality assurance is the use of Bundle Payment models, specific to a particular type of care, such as a total joint replacement bundle payment. Cerner is experienced with clients utilizing bundle payment models, including standard content for all 35 CMS Bundled Payments for Care Improvement (BPCI) Advanced (CMS Innovation Model) and commercial payer bundles. Standard content identifies bundle events, qualifying services provided during that bundle and associated costs. Based on those calculations, clients evaluate historical payments compared to equivalent bundle payments. The same calculations may be used once the bundle is implemented to determine bundle payments, evaluate overall bundle impacts and refine the bundle over time.



Clients also may predict future implications of a bundle. For example, compliance with one of Cerner's standard quality measures may be correlated with shorter length of stay and lower cost of care for a particular bundle. Accordingly, clients may want to emphasize that measure as one way to help obtain higher bundle performance.

Bundle payment models are designed to help providers manage risk while facilitating a higher quality of care and better experiences across the care continuum. We leverage our big data Platform, HealtheIntent, and predictive assessment tools, care coordination model and expertise in managing members from the hospital through the post-acute care continuum.

Cerner's ongoing strategy to support clients as they transition to various value-based care models helps to better align economic and clinical quality performance incentives for payers and providers. We have a proven ability to integrate into any EHR system with the HealtheIntent Platform to accelerate our clients' population health and value-based care reimbursement strategies. Moving forward, Cerner will continue to build upon our partnerships to advance our business development and go-to-market strategy.

Figure 10 Episode Management Tools

#### Episode management tools + offerings Capabilities that automatically identity parents sorly in the SLIR one notify herein system seed and care management (O) or transitional trass management specimes. Mochine hamong total general expatitions that identify Patient catherin or tick in: readmissions and consum upland bee: PAC series. strengthed workfloor and experiences that support the **Episode** management of hardly, care and surings acress the management Constitution, Readmission Can address that support pre-program margin program. parformance monogrammit, analysis of network and appearance, for episodis openid reduction provide or during a basiness arrest toward a Health & Herrices to help create and navigors a clear, perconstruct path to exceed in units-cased care, because technology a only de valuable of the services NOW NEXT

PG011 Fraud, waste, and abuse detection

The Program Integrity Application provides an automated fraud and abuse detection and profiling system. This system is based on a library of identified risky billing behaviors that were built using the Analysis Tools in the Application. These analytic algorithms will grow over time, consistent with Department, state, and federal policies, guidelines, and laws. Also, users of the system can create their own algorithms with ease and add them to the library. The results of each analytic algorithm drives Reports and Alerts and contributes to an overall Provider Risk Score that is constantly updated as new data enters the system. A few examples of the behaviors identified by these pre-built analytics are:

- Impossible Days impossibly long workdays by rendering providers
- Inpatient Overlap outpatient services billed while the member is inpatient in a facility



- Large quantities or percentages of members "shared" across providers
- Multiple dental extractions performed on the same tooth
- Dental restorations performed on previously extracted teeth
- Misuse of "new patient" E&M procedures for established patients
- "Phantom Transports" transportation services for members with no other covered services
- Upcoding ex. emergency ambulance services to non-emergency providers
- Unbundling ex. individual billing of drug screen tests that have a combined billing code
- "Phantom Prescriptions" prescriptions for controlled substances where there were no prescriber services on the date the prescription was written
- Inappropriate prescribing or filling of opioids
- Emergency room and hospital admission for the same member on the same day
- Providing services without a license or during a suspension

## PG012 Comparison of fee-for-service (FFS) and managed care

The Department can compare how fee-for-service populations fare versus managed care populations. Comparisons in these standard reports include quality, spend, and utilization measures. The Department can also increase the complexity of this evaluation by risk adjusting the populations to give a more accurate comparison between the two, as well as to ascertain the cost of the managed population compared if they had been fee-for-service.

# PG013 Other functions as described in the Advanced Planning Document (APD) and/or the Request for Proposal (RFP)

Our system is flexible, and the services provided can be allocated to those projects the state deems most important over the course of the contract. We will work in good faith to provide the best solution applications to the Department. In addition to things we develop, Cerner empowers DHHR to create their own content.

# PG014 The Vendor should comply fully with all applicable Department, State, and federal requirements and regulations including, but not limited to:

We have an extensive history and experience working with hundreds of our clients using this Platform and we are always evaluating regulations for compliance. We will work towards compliance with DHHR, state, and federal requirements and regulations as applicable to the proposed solution, and as we are required as the EDS vendor for the state's MMIS in achievement of your system certification.

#### PG015 State Medicaid Manual

The State Medicaid Manual does not directly apply to Cerner; however, we acknowledge there are certain requirements which flow to Cerner as the vendor for your EDS for MMIS and we will be required to adhere to these in order for the Department to achieve certification.

#### PG016 Centers for Medicare & Medicaid Services (CMS)

Cerner understands that CMS is responsible for MMIS certification. While the Medicaid requirements do not directly apply to Cerner, we acknowledge there are certain requirements which apply to the Department that will flow to us as the vendor. We will meet these requirements in order to achieve certification.



PG017 West Virginia State Medicaid Plan

The West Virginia State Medicaid Plan does not directly apply to Cerner; however, we acknowledge there are certain requirements which flow to us as the vendor for the Department's EDS vendor for MMIS and we will be required to adhere to these in order for the State to achieve certification.

PG018 Section 1902 and 2103 of the Social Security Act

Section 1902 and 2103 of the Social Security Act do not directly apply to Cerner; however, we acknowledge there are certain requirements which flow to us as the vendor for the Department's EDS for MMIS and Cerner will be required to adhere to these in order for the State to achieve certification.

PG019 Title 42, Code of Federal Regulations

Cerner supports this regulation for certification purposes. During contracting, we would like to work with the Department to define which parts of 42 CFR the state seeks Vendor compliance for.

PG020 Applicable West Virginia Code

Cerner will adhere to the applicable West Virginia Code, as it pertains to Cerner's responsibilities as the Vendor for the Department's EDS solution in achievement of the MMIS certification.

PG021 Chapter 9, Human Services

Cerner will adhere to Chapter 9, Human Services of West Virginia Code, as it is applicable to our scope of services and EDS solution, to support West Virginia in obtaining their maximum federal funds made available for MMIS certification.

PG022 Section 504 and 508 of the Rehabilitation Act of 1973 as amended

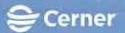
Cerner has a current VPAT on file for HealtheEDW and HealtheRegistries. HealtheEDW has been fully compliant with the US Rehabilitation Act Section 508 since September 2017. Cerner is continuously striving for full compliance of our solutions with the US Rehabilitation Act Section 508 and understands the importance of the regulations. Cerner will communicate with the Department regarding any non-compliant areas and offer contingency plans to prepare for any impacted users.

PG023 West Virginia Children's Health Insurance Program (CHIP) State Plan

The West Virginia Children's Health Insurance Program (CHIP) State Plan does not directly apply to Cerner; however, we acknowledge there are certain requirements which flow to us as the vendor for the Department's EDS for MMIS and we will be required to adhere to these in order for the State to achieve certification.

PG024 The Vendor should address how data fields to be included in the data warehouse are defined and agreed upon during Design, Development and Implementation (DDI) as well as how new fields will be added.

Cerner will work with DHHR to create effective ways to configure new data fields with a process to promote efficiency and accuracy. Our team of strategists and developers will work directly with the appropriate subject matter experts at DHHR to confirm any additional logic/criteria or transformation that is required to define a new field. Transformation design is focused on the



use cases associated to a particular phase of DDI or request through Operations and Maintenance. The configuration is very easy through our UI tools which enable building layouts quickly and efficiently. In most cases we will load all source fields by default to have the full details from the source available for current and future scenarios that might require additional transformations, such as in operations.

Our implementation manager and operations manager provide support throughout all phases of the project. They serve as a central communication point and ensure established processes are followed to manage requests for data extracts, for new data fields, reporting and analytic content, and for maintenance of existing content. We anticipate the Department's implementation manager will assist with aligning experts for each workstream during the DDI phases. For requests during operations, the duration of support needed from experts will be specified during the review of the request. New data fields and data fields to be included in the data warehouse are added as described below:

- Design process—Cerner will work with DHHR to identify use cases and business needs, identify needed fields, validate the accuracy of queries to generate those fields, and communicate all work through detailed documentation.
- 2. Configuration ease via UI tools—DHHR users can use the data models tab in HealtheAnalytics to create calculated fields or join additional tables to retrieve a field from an existing table. All of this can be done with a simple point and click system; no coding is required. Configuration can be performed by DHHR so users do not have to wait for Cerner or your own team of database administrators to perform a given task.
- 3. Load all source fields—Cerner will load all source fields by default; users will have access to full details from the source available even if immediate use cases aren't applied. DHHR will have access to all data send to Cerner. Additionally, Cerner will work with DHHR to update data models so that the most useful fields are readily available for DHHR users with minimal effort on their end.
- 4. Design out of the box—We include Cerner's Master Person Matching logic to link all records by person. Healthelntent delivers additional fields to indicate people matches across data sources, risk scores, etc. Therefore, depending on the new field that needs to be created, it is possible the logic already exists in the Healthelntent Platform.
- 5. Transformation Design on Use Cases—Cerner will work with DHHR to update a data model with new fields to meet a specific use case.

PG025

The solution should mirror all fields and field naming conventions (both current and future) within the Medicaid Management Information System (MMIS).

Cerner stores source files as they were sent to us including the naming conventions sent from the source. We have the flexibility to continue to utilize the DHHR naming conventions as well as use alternative structures where appropriate. For example, we provide a modernization process for normalization and standardization. As the number of data sources increases the complexity of naming conventions that are unique to the source, is undesirable because it adds tremendous complexity. Our standard models simplify that by capturing the data in a uniform way that can be analyzed more logically and simply. DHHR can choose to use the standard naming, choose to maintain the MMIS conventions or use a hybrid approach.



The Vendor should propose, develop, produce, and maintain a searchable and indexed library embedded within all solution applications including, but not limited to:

Cerner provides a searchable and indexed library, embedded within all solution applications, that includes solution policy manuals, training materials, user guides, implementation memos, a data dictionary, and Frequently Asked Questions (FAQs). We provide a client specific Project Portal that will house all DHHR documentation that is created and made available for all users on-line. All of the items listed below will be housed within the Project Portal and accessible to any authorized DHHR user.

Additionally, we support embedded reference text URL links that launch directly to your local intranet, the Internet, or a shared drive for internal and external information sources, protocols, and/or clinical guidelines to provide additional support directly within the workflow.

PG027 Solution policy manuals

Yes. Please refer to our response to requirement PG026.

PG028 Training materials

Yes. Please refer to our response to requirement PG026.

PG029 User guides

Yes. Please refer to our response to requirement PG026.

PG030 Implementation memos

Yes. Please refer to our response to requirement PG026.

PG031 Data dictionary

Yes. Please refer to our response to requirement PG026.

PG032 Frequently Asked Questions (FAQs)

Yes. Please refer to our response to requirement PG026.

PG033 The Vendor should provide full documentation of developed reports in a searchable, electronic, legible format that is available within the solution.

Users can search for all reports within the application. We provide a Google®-like search within HealtheAnalytics of all developed reports. The search results include the report name as well as metadata details about the report. Detailed design documents for every report are included in the Project Portal that is accessible to authorized users.

PG034 The solution should maintain updated industry standard and third-party reference data as it changes including, but not limited to:

We support approximately seven (7) million standard terminology codes that are preloaded and maintained within the system so that data can be compared for a wide variety of use cases. We are committed to updating these as the latest terminology versions are made available. In total, over 1,000 coding systems are maintained including all the items in the list below as well as other large standards such as SNOMED CT, NDC, LOINC, ICD 10, and HL7. Maintaining these standards are critical to Cerner's success in analyzing non-claims data.



PG035 Inpatient hospital Diagnosis Related Groups (DRGs)

Yes. Please refer to our response to requirement PG034.

PG036 Current Procedural Terminology (CPT)

Yes. Please refer to our response to requirement PG034.

PG037 Healthcare Common Procedure Coding System (HCPCS)

Yes. Please refer to our response to requirement PG034.

PG038 Therapeutic classes

Yes. Please refer to our response to requirement PG034.

PG039 The solution should have the ability to review utilization by Department-defined member categories to determine the extent of participation and related cost.

HealtheAnalytics allows DHHR to review utilization statistics by any category in the system. The review can include simple categories like member age or complex categories such as members who had a particular disease with a particular procedure within the last year.

PG040 The solution should have the ability to review utilization by Department-defined provider categories to determine the extent of participation and related cost.

HealtheAnalytics allows DHHR to review utilization statistics by any category in the system. For example, users can classify providers by post-surgical outcomes of a particular surgery, divide cohorts by impact of quality gap, and utilization.

PG041 The solution should have the ability to review utilization by Department-defined Managed Care Organization (MCO) categories to determine the extent of participation and related cost.

HealtheAnalytics allows DHHR to review utilization statistics by any category in the system. The review can include simple categories like comparing Per Member Per Month spend by MCOs. Clients commonly utilize our analytic tools to evaluate complex utilization review category such as comparing one MCO that has a lot of integrated behavioral health services that they pay for as opposed to one who has very little behavioral health care in the same state, to provide better continuity of care for behavioral health members. HealtheAnalytics helps compare the quality measure outcomes for the behavioral health members of two MCO's where one MCO has a behavioral health program to determine if it is effective.

PG042 The solution should have the ability to archive and retain data in accordance with Department, State, and federal regulations, laws, policies, and/or procedures.

We will retain all data for the duration of the contract. Data stored within the Cerner database displays a complete visit history and is not purged or archived. DHHR has immediate access to the entire member record, including information from current and past visits.

PG043 The solution should have the ability to receive data from the Medicaid Management Information System (MMIS) including, but not limited to:

MMIS data sources are commonly included with our clients. We have standard templates which allow us to load the full breath of data in a high efficiency and high-quality process. The Cerner team is very experienced with loading data from all types of sources.



PG044 Claims history

Cerner typically includes an extensive claims history for 10 years.

PG045 Member enrollment

Cerner typically includes an extensive member enrollment history for 10 years.

PG046 Provider enrollment

Cerner typically includes an extensive provider history for 10 years.

PG047 Primary reference data such as:

Cerner preloads standard reference data sets such as diagnosis, procedure, and National Drug Codes (NDC). Non-standard reference data can be loaded as well. We support approximately seven (7) million standard terminology codes that are preloaded and maintain within the system so that data can be compared for a wide variety of use cases. We are committed to updating these as the latest terminology versions are made available. In total, over 1,000 coding systems are maintained including all the items in the list below as well as other large standards such as SNOMED CT, NDC, LOINC, ICD 10, and HL7. Maintaining these standards are critical to Cerner's success when analyzing non-claims data.

PG048 Diagnosis

Yes. Please refer to our response to requirement PG047.

PG049 Procedure

Yes. Please refer to our response to requirement PG047.

PG050 National Drug Code (NDC)

Yes. Please refer to our response to requirement PG047.

PG051 Pricing

Yes. Please refer to our response to requirement PG047.

PG052 The solution should have the ability to refresh or replace all historical claims data, member enrollment, provider enrollment, and other primary reference data on a scheduled basis as approved by the Department.

Cerner typically refreshes data as frequently as the source system can provide. We will work with the Department to define the precise schedule.

PG053

The solution should have the ability to refresh or replace all historical claims data, member enrollment, provider enrollment, and other primary reference data as defined by the Department.

Cerner typically refreshes data as frequently as the source system can provide. Our Universal Content Architecture (UCA) team centrally manages this reference data diagnosis. Additionally, DHHR can refresh or replace all historical claims data, member enrollment, provider enrollment, and other primary reference data independently, including to load, transform, and create reports.



The solution should provide the ability to manage offline storage and retrieval of archived data.

Because Cerner's platform does not have any storage limits, there is no need to offline data or archive it as it is all kept in production.

PG055

The solution should have the ability to look up information such as subsets, norms, benchmarks, query creation, and all other objects.

We provide preloaded current standards and benchmarks, and anything beyond our standard we can create for DHHR. We provide internal benchmarking and comparing performance within DHHR data sets. Additionally, we can load external benchmarks for comparison to see how the trends have either continued or changed. HealtheAnalytics allows for the measurement of performance and benchmarking progress toward business goals by providing norms and benchmark data with extensive capabilities to run queries on subsets of the data. We provide internal benchmarks, external benchmarks that we preload, and support the ability to load custom global benchmarks.

After DHHR data is standardized and normalized, CMS benchmarks are made available within the Platform for immediate benchmarking analysis. With the flexibility of our offering, DHHR is not limited to only one set of benchmarks but has the ability to leverage West Virginia state-wide benchmarks, load other external state measures, rare specialty measures, and other internal benchmarks to analyze and report dimensions and commonalities. Additionally, our applications and tools provide the capability to statistically analyze similarities and differences across many groups while also controlling for possible confounding variables. This improves the precision and validity of benchmarking analyses, such as compliance rate with a specific quality measure or average cost for bundle payment models.

PG056

The solution should have the ability to receive data in different formats and from different sources including but not limited to:

The HealtheIntent Platform receives data from over 1,000 data sources in optional latencies from any system allowing us to have extensive experience in this space. The data is available for reporting after processing and normalization. The Platform accepts discrete data in various formats, including HL7, EDI, and CSV flat files. With this approach to data sources, delivery, and display, Cerner can control and execute all aspects of the extract, transform, and load process. We also offer reusable templates to connect over 800 systems, facilitating higher quality and faster configuration when working with those vendors or similar systems. This library continues to grow thanks in large part to our extensive client base. For example, we currently maintain over 500 Aetna feeds. Once identified, item changes are made available to each of our clients.

After acquisition of data from multiple sources and venues, this data is stored in its unstructured raw format. That raw data persists to support immediate use cases as well as the capacity for reprocessing for future needs. Raw data is then processed, beginning with code standardization. The HealtheIntent Platform supports proprietary codes by associating them to an appropriate industry standard code such as LOINC and SNOMED CT via machine learning and automated techniques. The Platform also provides ontological layering and standard terminologies that can be defined on a use case basis.

Ontologies provide the ability to define concepts as different collections of industry standard codes, enabling the system to leverage standard terminologies while still maintaining the



flexibility necessary to support a variety of use cases. Incomplete data is detected and corrected upon being received and inaccurate data is identified quickly. To ensure data quality, the Platform runs multiple algorithms to ensure the integrity of the incoming data. We provide a library of over 150 quality checks as well as quality control procedures and are continually adding to this number to ensure quality of the data, transfer, and conversion process. All our clients share the benefits as we add new checks and incorporate enhancements across the Platform.

The Platform captures data from both internal and external entities, such as public health surveillance data, vital statistics data, encounter data, MCO encounter data, pharmacy data, dental data, behavioral health data, waiver program enrollment data, and more, and makes it available for incorporation into analytics, reporting, forecasting, and mapping where appropriate. The Platform consumes needed data, and once processed and normalized, the data is available for use.

## PG057 Vital statistics data

We have significant experience helping our clients identify and maximize data from disparate sources and turn that into information and knowledge. Vital statistics data can provide a wealth of critical information, especially in the context of managing the opioid epidemic. For example, we are actively working with existing clients to overcome various legal hurdles surrounding the sharing of vital statistics data because they need more accurate counts of overdose events and overdose deaths.

## PG058 Encounter data

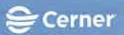
Cerner is highly experienced with Medicaid claims and encounter data, that includes all data and services, and can provide insight regarding the quality and types of data needed for MCO performance monitoring, rate-setting, network adequacy/access to care, and public accountability. Our experience with the receiving, processing, translating, and validation of managed care encounter data also helps speed improvements in data integrity and increase credibility of the information. We load and adjust the data from dozens of different payors and handle the various elements in those encounter files once the data is in the system. As we capture encounter data, we make it available for incorporation into analytics, reporting, forecasting, and mapping where appropriate. The Healthelntent Platform consumes the needed data, and once the data processes and normalizes, the data is available for use.

# PG059 Managed Care Organization (MCO) encounter data

Cerner is highly experienced with Medicaid claims and encounter data, that includes all data and services, and can provide insight regarding the quality and types of data needed for MCO performance monitoring, rate-setting, network adequacy/access to care, and public accountability. Our experience with receiving, processing, translating, and validation of managed care encounter data also helps speed improvements in data integrity and increase credibility of the information. The enterprise data warehouse allows users to explore patterns and anomalies which helps foster MCO encounter data integrity.

#### PG060 Pharmacy data

We are experienced in loading pharmacy data including not only claims, but also additional data about medications from physical stand-alone pharmacies, inpatient pharmacies, and HIEs. We identify medication adherence to reduce additional care utilization, the need for subsequent



meds, and emergency room visits. Additionally, we provide a generic vs. name brand discovery to identify high cost medications. One of our Medicaid clients is using the HealtheIntent Platform to identify their most expensive prescriptions. We are also able to determine distance between member's residences and pharmacies, as that may be a factor in medication adherence. Additionally, we capture pharmacy data for utilization analytics. For example, our work toward reducing opioid abuse provides reporting on populations who are at the greatest risk. We can also incorporate PDMP data to get a more complete picture around opioid prescription.

#### PG061 Rebate data

Cerner has experience loading prescription drug rebate data into the system, including program data. The HealtheIntent Platform supports the ability to captures and onboard prescription drug rebate data as it is made available from the Medicaid Drug Rebate Program (MDRP) by either the Department or drug manufacturers. We make that data available via reporting and in standalone data sets and data models for more flexible investigation.

## PG062 Dental data

We bring dental claims data into the solution and provide metrics to identify populations that do not receive preventative care.

#### PG063 Behavioral health data

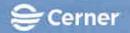
The HealtheIntent Platform captures data from both internal and external entities including behavioral health data, and makes it available for incorporation into analytics, reporting, forecasting, and mapping where appropriate. We have significant experience helping our clients capture behavioral health data, consuming the needed data, and making the data available for meaningful analysis through Cerner's Master Person Matching logic, standardization, out of the box algorithms, and other mechanisms. Clients gain significant clinical behavioral health data within claims, and Cerner can map that information in data models. We have ontologies that help us handle behavioral health diagnosis including medications and treatments where a substance use facility may have some unique data available or bed availability data and we can map that information. We are constantly bringing in over 1,000 different types of data elements into the Platform and join that data for reporting and analysis. We have experience incorporating behavioral health services data and can identify ways to improve care and outcomes.

## PG064 Waiver program data such as enrollment

We store granular claim data as well as program/waiver enrollment data so that individual programs can be evaluated to determine spend and relative spend to MCO, waiver, FFS, and other scenarios. DHHR can monitor participating provider and MCO performance against quality outcomes and trend applicable payment incentives, including comparisons between FFS and MCO's.

# PG065 Others identified by the Department

Cerner understands that DHHR's business needs are ever-changing and Cerner will work with you to address those needs in good faith as those needs arise. Our standard data model covers an extensive data set. As part of our implementation strategy, we will conduct strategy sessions to understand your needs, recommend best practices based on our experience, and work with you to refine the approach based upon your feedback.



The solution should provide the ability to report any issues impacting integration and interoperability between the proposed solution and related data sources within one (1) business day of discovery.

Through data quality monitoring capabilities, we will identify and communicate issues impacting integration and interoperability within one (1) business day of discovery. These issues will then be communicated to DHHR with an audit trail through eService. Any issues identified would result in a Service Record being logged. The Service Record portal will help DHHR and the Cerner team identify, log, and track all errors and discrepancies found in the application. Potential enhancements to the application are also logged and tracked in this portal. The errors and discrepancies are triaged on a regular basis and the status of the errors and discrepancies are communicated to DHHR and the project team on a mutually agreed upon timeframe.

Our data quality monitoring capabilities consists of both automated and manual capabilities to ensure that data received at both initial load and on a day-to-day basis is performed in a highly reliable manner. The HealtheIntent Platform runs simultaneous algorithms to ensure data volume, quality, and integrity of incoming data. Data ingested undergoes a data validation process to ensure data quality at initial historical load, and that quality is maintained throughout the life of the contract. The system performs checks against incoming data sets to validate the data against balance files. Records that fail validation are centrally monitored by a Cerner team that provides services to evaluate issues as they arise.

This team investigates, makes recommendations, corrects or resolves the issue, creates Service Records as needed, and works closely with DHHR to ultimately resolve the issue. For example, if a file was not received, we can send a message to the source system requesting the data, and tag that email in a Service Record to track ongoing resolution. The activities during the investigation and resolution process are captured and produced in data quality reports that are available to DHHR within the Project Portal. With this reporting, DHHR can clearly see the checks performed, understand the conclusions, and drill down to additional information if needed.

We also support the ability for more advanced checks against data set trends. For example, the system can identify if a data set that historically includes both male and female values is sent with only male values. The system populates a status dashboard of incoming data sources that is monitored by the Cerner team. Should an issue with a source be found, the Cerner team will take steps to correct the issue and, if necessary, alert all appropriate parties for further resolution. Any issues are tracked in our online issue tracking system, eService, through resolution. We provide a library of over 150 quality checks and are continually adding to this number. These quality checks continually run to help us determine data quality issues. Some of these checks are critical and would have significant impact on the end user if promoted to production. In these instances, we keep the domain stable with the previous data and do not allow the corrupt data to proceed to production. These critical issues then branch off into a process where we provide human resources to investigate, engage the client as needed, create and track through a Service Record and work to resolve promptly.

As per the communication plan, Cerner works with DHHR to set up a weekly or bi-weekly operations status meeting to discuss the status of all the errors or discrepancies logged in the Service Record portal. Cerner will also send out weekly operations status reports to DHHR providing the status of all the issues and discrepancies. For Service Level Agreements (SLAs) regarding critical issues and rapid turnaround times, notification rules support expedited communication. This communication is linked to the Service Record, is fully auditable, and



informs the individuals on that ticket and any other key staff members identified in the communication plan. As part of our implementation strategy, we conduct strategy sessions, recommend best practices based on our experience, and work with DHHR to prioritize the data validation critical to your success.

PG067

The solution should have the ability to integrate data from sources including, but not limited to:

Cerner has experience with many types of data and how best to incorporate said data into our system. We build data models that contain these disparate data sources and provide predefined data models and reports. Our experienced team manages the ongoing flow of data into the environment and utilizes the latest industry standards and best practices for the data conversion process. Users can analyze everything from sample data files to unique considerations required for mapping. Once data is validated using mutually agreed upon guidelines (e.g., row count, file size, and content), it is moved into HealtheEDW.

This process will flag any errors or anomalies for reconciliation against source data. This step helps ensure data from multiple sources can be used seamlessly in reporting. With our data load templates, we can load data into the platform faster, leverage data quality capabilities from past experience to understand it and map it appropriately. For example, if a data source sends proprietary values, we can map these to industry standards such as LOINC and SNOMED CT. We provide a library of over 150 quality checks and are continually adding to this number. All of our clients share the benefits as we add new checks and incorporate enhancements across the Platform. The table below provides a small subset as examples of these quality checks.

PG068

Eligibility

Yes. Please refer to our response to requirement PG067.

PG069

Capitation

We support the ability to capture and analyze managed care program data including bundle payments, Medicare Shared Savings Programs (MSSP), and capitation. We are currently working with one of our Medicaid clients to create dashboards around payment comparison of the total capitation payments the state makes to the MCOs vs. the total payments MCOs have reported on their paid encounter claims (payments to providers). We store encounter data and can sort and understand MCO spend for use in evaluating future year capitation rates. We evaluate historical rates to actual costs and can evaluate new group and new subgroups for possible new capitation rates.

PG070

Claims system

Yes. Please refer to our response to requirement PG067.

PG071

Managed care encounter data

Yes. Please refer to our response to requirement PG067.

PG072

The solution should have the ability to integrate data from contractors including, but not limited to:

Cerner has experience with many types of data and how to bring it into our system. We have experience loading disparate data from various contractors including the data sources listed below. We have loaded data from over 1,000 different data sources and provide predefined data



models and predefined reports. Our experienced team manages the ongoing flow of data into the environment and utilizes the latest industry standards and best practices for the data conversion process, from analyzing sample data files to the unique considerations required for mapping. Once the data is validated using mutually agreed upon guidelines, including but not limited to row count, byte size, and content, the data is moved into HealtheEDW. This process will note any errors or anomalies to reconcile against the source data. This step helps ensure data from multiple sources can be used seamlessly in reporting.

PG073 Pharmacy benefit manager (PBM)

Yes. Please refer to our response to requirement PG072.

PG074 Behavioral health plans

Yes. Please refer to our response to requirement PG072.

PG075 Managed Care Organization (MCO) health plans

Yes. Please refer to our response to requirement PG072.

PG076 Children's Health Insurance Program (CHIP) contractors

Yes. Please refer to our response to requirement PG072.

PG077 Others as defined by the Department

Cerner understands that DHHR's business needs are ever-changing and we will work with you to address those needs in good faith as those needs arise. Cerner has decades of experience ingesting and integrating various data types and we would be happy to incorporate custom requirements based on your changing priorities.

PG078 All data sources as defined by the Department

We have reviewed all of the data sources listed in the RFP. Cerner has direct experience in bringing the majority of these sources into the Platform. Those we have not yet incorporated align well with our current capabilities. We will collaborate with the Department to gather the granular details behind these sources and implement them as a part of the project plan.

PG079 Providers

Provider contact information from the National Plan & Provider Enumeration System (NPPES) database as well as MCO and FFS provider files are available within our analytics applications. NPPES data is maintained and updated as part of our standard data model.

PG080 Reference files

Cerner supplies pre-loaded industry standard reference files and augments them with state specific data. We support approximately seven 7 million standard terminology codes that are preloaded and maintained within the system so that data can be compared for a wide variety of use cases. We are committed to updating these as the latest terminology versions are made available. In total, over one thousand coding systems are maintained as well as other large standards such as SNOMED CT, NDC, LOINC, ICD 10, and HL7. Maintaining these standards are critical to Cerner's success in analyzing non-claims data.



The solution should have the ability to securely load, save, and report on confidential and/or proprietary data/information, and limit access to authorized solution users.

Security is a top priority for Cerner. All information and data exchange within the system is encrypted and secured. We have proven experience supporting data from millions of members, within the Platform, that protects data and securely loads, saves, and reports on this confidential data. The HealtheIntent Platform supports role and content-based access limiting data to authorized application users. Role-based and individual privileges and exclusions for accessing or editing information is supported with the ability to assign security access privileges by individual user as well as user groups.

As part of the overall structure of our System Security Plan (SSP) regarding Security, the Platform establishes uniform security requirements and defines standards of all authorized users who require access to the network and any information assets received, created, or transmitted by the State. This may include networks, systems, applications, and protected information such as electronic Protected Health Information (PHI), and Personally Identifiable Information (PII).

Within HealtheDataLab, data access can be controlled via role-based security. Common scenarios include core department users can have full identified access to data, whereas a research group may have access to only de-identified data and may further be restricted to just subsets of the overall population. When appropriate, those researchers may request for certain de-identified records to be identified and the state has the ability to approve that request and convert a non-PHI identifier into the corresponding PHI information.

PG082

The solution should have the ability to incorporate current standards and benchmarks as defined by the Department relevant to Medicaid and other health care programs including, but not limited to:

Cerner provides preloaded current standards and benchmarks, and anything beyond our standards can be created for DHHR. We provide internal benchmarking and comparing performance within DHHR data sets. Additionally, we can load external benchmarks for comparison to see how the trends have either continued or changed. HealtheAnalytics allows for the measurement of performance and benchmarking progress toward business goals by providing norms and benchmark data with extensive capabilities to run queries on subsets of the data. We provide internal benchmarks, external benchmarks that we preload, and support the ability to load custom global benchmarks.

Following standardization and normalization of DHHR data, CMS benchmarks are made available within the Platform for immediate benchmarking analyses. With the flexibility of our offering, DHHR is not limited to only one set of benchmarks; you can leverage West Virginia state-wide benchmarks, load other external state measures, rare specialty measures, and other internal benchmarks to analyze and report dimensions and commonalities. Additionally, our applications and tools provide the capability to statistically analyze similarities and differences across many groups while also controlling for possible confounding variables. This improves the precision and validity of benchmarking analyses, such as compliance rate with a specific quality measure or average cost for bundle payment models.

PG083

Utilization

HealtheAnalytics provides the capability to identify services that are under- or over-utilized resulting in high cost care or gaps in care. By identifying services where the rate is abnormally



high our clients use HealtheAnalytics to research why the costs were high, or gaps occurred. We provide a library of utilization measures such as ED utilization, inpatient stays, readmission, PMPM costs, and more. These metrics help DHHR quantify utilization with the ability to drill down into the details, related to the findings, to reduce unnecessary utilization. We also support advanced measures such as risk scoring, and avoidable Emergency Department visit identification to assist in quantifying avoidable Emergency Department visit identifying where particular care was needed in order to identify a more appropriate venue of care.

#### PG084

Cost

HealtheAnalytics assists in managing cost information identifying providers charge history and what organizations are charging to view why it is costing more in different areas for the same care. We support the ability to compare the current cost of individuals on a waiver to the cost of care they were previously receiving. We also offer data science services that can run simulations of these various proposed programs and use existing research from other states to get an idea of what the projected cost and health outcomes would be. Examples of this would include the ability to link to clinical guidelines to help ensure that providers are managing populations as effectively as possible. The HealtheIntent Platform enables the ability to calculate total claims costs across numerous different data variations. For example, the Platform can show claims costs for a single member, claims costs for all members who received a particular procedure, and/or claims costs for a single procedure performed at one hospital versus another. Our ability to easily segment data for simple or complex comparisons can be achieved with our easy to use HealtheAnalytics tools.

#### PG085

Quality of Care

The HealtheIntent Platform includes quality measures such as the Adult and Child Core Set measures. These measures provide a higher degree of accuracy and quality assurance when we include EHR and HIE data into the Platform based upon our experience at 173 different client sites. This additional clinical data gives a full picture of the member and assists in visualizing those members with gaps in care. Utilizing our included HealtheAnalytics application, users manage their population, evaluating clinical care, and identifying those members who might otherwise fall through the gaps. Additionally, our quality measures library, which includes over 1,000 measures for both disease specific measures as well as wellness measures, enables your users to quickly determine where care gaps exist and cross-reference that with a variety of different data to close those gaps. We provide many initiatives to hold providers accountable for managing specific diseases such as evaluating pre-diabetics based on incorporated laboratory results from the EHR. This quality measure includes identification of those members who maintain a controlled blood sugar and those who become diabetic.

Another indicator of quality assurance is the use of Bundle Payment models, specific to a particular type of care, such as a total joint replacement bundle payment. Cerner has experience working with clients on bundle payment models including standard content for all 35 CMS Bundled Payments for Care Improvement (BPCI) Advanced (CMS Innovation Model) and commercial payer bundles. Standard content identifies bundle events, qualifying services provided during that bundle and associated costs. Based on those calculations, clients evaluate historical payments compared to equivalent bundle payments. The same calculations may be used once the bundle is implemented to determine bundle payments, evaluate overall bundle impacts and refine the bundle over time.



Clients also may predict future implications of a bundle. For example, compliance with one of our standard quality measures may be correlated with shorter length of stay for a certain bundle. Accordingly, clients may want to emphasize that measure as one way to help obtain higher bundle performance. Bundle payment models are designed to help providers manage risk while facilitating a higher quality of care and better experiences across the care continuum. The offering combines the HealtheIntent Platform and predictive assessment tools, care coordination model and expertise in managing members from the hospital through the post-acute care continuum.

Our ongoing strategy to support clients as they transition to various value-based care models helps align economic and clinical quality performance incentives for payers and providers. We have a proven ability to integrate into any EHR system with the HealtheIntent Platform to accelerate our clients' population health and value-based care reimbursement strategies. As we begin 2020, we will continue to build upon these types of partnerships to build the business development and go-to-market strategy for our clients.

## PG086 Outcomes

Cerner captures data to support the analytics of claims statistics and encounter data for member outcomes and can benchmark those against industry quality standards and DHHR specified health outcomes. DHHR can explore patterns and anomalies and monitor participating provider and MCO performance against quality outcomes and trend applicable payment incentives. For example, analytics are used by our clients to monitor service utilization trends, gain insight into reducing unnecessary/inappropriate utilization of emergency health services, identify ED visits that are "non-emergent" or "primary care treatable", and analyze avoidable readmissions.

The HealtheIntent Platform includes a library of outcome measures that summarizes data, identifies trends, predicts future behavior, and uses industry standards for maximum interoperability. We support program management, financial management, policy and budget formulation, clinical outcomes, forecasting, programmatic monitoring, and trend analysis. The Platform is a comprehensive solution that provides the ability to incorporate data from various external systems and export that data in a meaningful way to help improve financial measures, spending, and care. We can help DHHR track how much you are spending and where your dollars are spent, identify where you can save money due to claims processing errors and double billing/payment, and help you forecast your budget and appropriate every dollar spent.

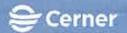
If DHHR runs additional analysis, data science will drive those rules. This includes the ability to add new rules for claims processing, analyze historical claims against those rules to determine different outcomes for a particular collection of claims if those rules had been applied.

# PG087 Prevention

The HealtheIntent Platform supports a range of analysis to review and compare utilization as well as risk prevention data. This includes standard benchmarking of utilization statistics, quality measures, health care authority data, and any other variable to ascertain utilization and health outcome performance.

# PG088 Access to Care

The HealtheIntent Platform supports data models that can incorporate relationships between members and providers. This includes the ability to look at the routine care individuals should be



receiving and identify if particular providers are not able to deliver effective and efficient care due to capacity or influx of members. We can also incorporate the capacity for particular services, for example, capacity at substance use disorder clinics. Beyond simply receiving information, we can also ascertain details such as lack of access to care by geographic area and more. The Platform features visualizations geographic information system (GIS) and enterprise-wide datasets and as defined by DHHR. The application supports the presentation of data associated with geographic indicators (GI) by state, county, and zip code plus four, or specific latitude and longitude coordinates and can store this GIs from DHHR's source systems and allow users to use them in their queries or maps. These geospatial capabilities allow DHHR to know where people are, where various providers are, how far apart different services are and can be used to answer endless questions about access to care. Cerner goes further to support multi-dimensional visualization capabilities linking geographic information to items such as provider access, health conditions, and diagnoses.

## PG089 Eligibility

Our system is highly flexible in providing benchmarks and current standards for eligibility. Healthelntent supports the ability to combine member eligibility/enrollment, claims, clinical and other data to conduct analysis around prescribing patterns, drug utilization, and potential substance use disorders. An example of this is our opioid dashboard, currently utilized by our current Medicaid clients, that allows them to identify the portion of their population most at risk for addiction and overdose. We can break out the managed care program data and report on the category of service, category of eligibility, provider/specialty, and others as needed. As part of our implementation strategy, we will conduct strategy sessions, recommend best practices based on our experience, and work with you to refine the approach based upon your feedback.

#### PG090 Administrative Performance

We provide benchmarks and current standards for MCO administrative cost, wavers, Transformed Medicaid Statistical Information System (T-MSIS) reports, and administrative responsibilities related to federal reporting. We also provide administrative accountability of claims processing and assist based upon rejection/denial rates, analysis of the error codes, waiver accountability, and adjustment reasons based on provider coding errors where the MCO would be responsible for making the corrections.

With our included HealtheAnalytics application, users can collect utilization and claims data, as well as other key Medicaid and CHIP program information. This allows the Department to keep pace with data needed to improve beneficiary quality of care, assess beneficiary to care and enrollment, improve program integrity, and support the state, the private market, and all stakeholders with key information.

Cerner supports administrative performance through our very flexible ad hoc reporting analysis actions for providers or contractors, including analysis of utilization, gaps in care, PMPM, quality measures, performance measures, high-cost events, Adult and Child Core Set measures. Clients explorer many different aspects of Administrative performance including rate-setting calculations as well as review how spending has changed over time. HealtheDataLab allows DHHR to use a multi-level modeling statistical technique to assist with case-mix adjustments and being able to assess the variation in the risk under each MCO so that you can control for risk when assessing performance. This allows an element of fairness to those organizations who are caring for riskier populations.



The solution should have the ability to track claims processing activities and report on current status of payments.

We support the ability to view the current status of claims that have been submitted and/or adjudicated. This process is viewable when the claim is complete and provides the ability to view non-complete claims with the ability to report on non-completed claims information. Our data model supports receipt of prior authorization, as well as claims that have not been fully adjudicate. This data can then be utilized to evaluate status of payment as well as the average time of payment for each MCO as well as identify claims that have not been paid after a long period of time.

Typically, the claims processing source provides details such as missing data and error codes. Our application can be used to address common issues in the claim's administration and processing, such as identifying a broad approach to correcting common billing errors across the state, identifying that a particular service is being up coded for a particular diagnosis, identifying opportunities to utilize bundles, and evaluating the effectiveness of bundles. Users can generate reports that identify and analyze processing errors to determine how often claims are denied and why, as well as identify trends in common claims submission errors (incorrect member or provider data, insufficient coverage, invalid or incorrect ICD or CPT codes, lack of medical necessity, etc.). Reporting can leverage all applicable fields that are captured in claims processing, including all applicable date fields, provider types, specialties, and roles.

PG092

The solution should have the ability to access and report on third-party avoidance and collections per West Virginia Medicaid State Plan for the Department's review.

The data model supports loading eligibility information on Medicaid eligible members and possibly other third-party payer data, such as workers compensation data through state employee health plan data. We can leverage applicable claims details to determine claims and payment information, and reports can be created to monitor payment activity based on state-defined avoidance and collections criteria. That data can be cross referenced with medical care to determine the appropriate primary payers prior to Medicaid payment. Assuming we have all salient details (including the insurance type, claim type, service on the claim, etc.), then we can report as necessary on those details.

PG093

The solution should have the ability to track claims at any status or location including, but not limited to:

Our core data models include extensive claim details, including the ability to track final and adjudicated claims. Additionally, the models are extensible to include custom statuses that the Department may choose to utilize. These status codes can be used in any calculation, ad hoc report, or standard report.

PG094

Claims backlog

Yes. Please refer to our response to requirement PG093.

PG095

Key entry backlog

Yes. Please refer to our response to requirement PG093.

PG096

File status

Yes. Please refer to our response to requirement PG093.



Other indicators as identified by the Department

Cerner understands that DHHR's business needs are ever-changing. Our experts will work with you to address those needs in good faith as they arise.

PG098

The solution should have the ability to analyze and report on timely claims filing by providers.

Our data model supports when care took place, when claims were filed and when claims were paid. Ad-hoc reporting as well as standard reports can evaluate this data. Data may be compared in aggregate or as subgroup levels. For example, common reporting includes an analysis by MCO and by specific providers within an MCO.

PG099

The solution should have the ability to report on and accurately reflect payments on dual eligibles.

Our solution allows us to combine Medicare, Medicaid, and clinical care data into a single longitudinal person record based on the complex Cerner Master Person Matching logic. This longitudinal record ultimately gives DHHR the data needed to identify state responsibility, who is dual eligible, what services are being rendered, duplicative services, and if there are gaps in care. Additionally, our data science application and team will work in good faith with DHHR to predict future dual-eligible enrollment as a historic level of the population is aging into Medicare and will require long-term care services that are primarily covered by Medicaid.

Many of our clients have recognized that dual-eligible populations generally accrue high costs and increase complexity, and that managing their care goes beyond their medical characteristics. Cerner recommends an approach that leverages not only traditional data sources but also Social Determinants of Health (SDOH) and community metrics to understand the challenges that lead to high-cost outcomes.

PG100

The solution should have the ability to aggregate and report on services including, but not limited to:

All of the items listed below are saved in our core data model. We provide out of the box and pre-built reports as well as provide ad-hoc reporting tools available to investigate various characteristics.

PG101

Specified time periods

Yes. Please refer to our response to requirement PG100.

PG102

Service categories

Yes. Please refer to our response to requirement PG100.

PG103

Unduplicated claims

Yes. A standard part of our claims data process is to determine the unduplicated final version of the claim.

PG104

Members

Yes. Please refer to our response to requirement PG100.



PG105 Providers

Yes. Please refer to our response to requirement PG100.

PG106

The solution should have the ability to identify payments by type, as defined by the Department.

Our model is extendible based upon types of payments the Department prefers to utilize. Frequently, these payment types arrive from source systems, while in other cases they are inferred algorithmically. We support both types of calculations.

PG107

The solution should have the ability to track and report on claims by all attributes of the claim including but not limited to:

Our system is flexible and provides multiple standard reports, as well as included ad hoc reporting tools to create custom reports to track claims by all attributes of the claim, including all that are listed below. We provide a library of standard reports that are based on claims data including utilization, quality, cost, and more.

PG108

Claim and line identifier

Yes. Please refer to our response to requirement PG107.

PG109

Payment status

Yes. Please refer to our response to requirement PG107.

PG110

Member

Yes. Please refer to our response to requirement PG107.

PG111

Provider and entity identifiers

Yes. Please refer to our response to requirement PG107.

PG112

Diagnosis

Yes. Please refer to our response to requirement PG107.

PG113

Diagnosis code

Yes. Please refer to our response to requirement PG107.

PG114

**Procedure** 

Yes. Please refer to our response to requirement PG107.

PG115

Procedure code

Yes. Please refer to our response to requirement PG107.

PG116

**Treatment** 

Yes. Please refer to our response to requirement PG107.

PG117

**Dates** 

Yes. Please refer to our response to requirement PG107.



PG118 Reviewing entity

Yes. Please refer to our response to requirement PG107.

PG119 Others identified by the Department

We understand that DHHR's business needs are ever-changing and will collaborate with you to address those needs in good faith as those needs arise.

PG120 The solution should have the ability to assist auditors in reviewing provider cost reports and establishing a basis for cost settlements.

As claims and clinical data is received into the HealtheIntent Platform, the information will be aggregated for reporting at multiple levels, including the provider and member level. Our risk scoring capabilities will allow DHHR to risk stratify members against expected cost versus actual cost, DHHR identified national benchmarks, and other DHHR-defined benchmarks. HealtheAnalytics will enable DHHR users to review provider cost reports and expected costs for comparison. Cost-based reports can be created and filtered to individual providers for a variety of financial reporting approaches including cost settlement reporting to showing the difference between the cost to provide Medicaid services and Medicaid reimbursement.

PG121 The solution should have the ability to analyze and report on individual provider payments.

Provider payment data is a core part of the data model. This data can be viewed in aggregate or in detailed subgroups. Additionally, provider payments can be evaluated based on FFS or based on alternative models. Cerner has extensive experience with bundle payments as well as quality measure-based payment methods. Bundle payment models are designed to help providers manage risk while facilitating a higher quality of care and better experiences across the care continuum. The offering combines the HealtheIntent Platform and predictive assessment tools, care coordination model and expertise in managing members from the hospital through the post-acute care continuum. Our ongoing strategy to support clients as they transition to various value-based care models helps align economic and clinical quality performance incentives for payers and providers. We have a proven ability to integrate into any EHR system with the HealtheIntent Platform to accelerate our clients' population health and value-based care reimbursement strategies. As we start 2020, we continue to build on these types of partnerships to build the business development and go-to-market strategy for commercial.

PG122

The solution should have the ability to retrieve data, on an ad hoc basis, relevant to specific operational units including, but not limited to:

The below items are all included in our ad-hoc data model which enables non-technical users to create reports to view a summary and detailed data pertaining to claims resolution, prior authorization, and medical necessity review.

PG123 Claims resolution

Yes. Please refer to our response to requirement PG122.

PG124 Prior authorization

Yes. Please refer to our response to requirement PG122.



PG125 Medica

Medical necessity review

Yes. Please refer to our response to requirement PG122.

PG126

Others identified by the Department

We understand that DHHR's business needs are ever-changing and will collaborate with you to address those needs in good faith as those needs arise.

PG127

The solution should have the ability to maintain online access to selected management reports and annual reports for the time period specified by the Department, with flexibility for the Department to alter the length of the retention period.

As a part of the design discussions we would determine the appropriate retention period and persist report results for that time period. At runtime, users can select the appropriate time period from the available options.

PG128

The solution should have the ability to produce the current volume of Department standard and operational reports.

As part of our implementation strategy, we will conduct strategy sessions, recommend best practices based on our experience, and work with you to identify the standard and operational reports that need to be produced in our solution in the most efficient manner e.g. through a single dashboard with multiple drill options and visualizations to perform broader analysis or discrete reports to be ran individually. In the event an identified report is not available in our proposed solution, we will work with DHHR to identify the best way for the report to be created-either by DHHR user's building the report with our report building tools or by our team building out the reports. In the event the team is identified as being responsible for building the reports, consulting hours will be leveraged to complete the work.

PG129

The solution should have the ability to populate new data fields with historical data.

Users may load new data via our operations process inclusive of historical data. The HealtheIntent Platform receives data from over 1,000 data sources in optional latencies from any system allowing us to have extensive experience in this space. Our data loading templates accepts discrete data in various formats, including, but not limited to, HL7, EDI, and CSV flat files. This provides the ability to learn new data from a payer in another state which will accelerate and improve the quality when West Virginia loads that same data assisting in this process. In addition to industry standards, Cerner has reusable templates that are used to connect to over 800 systems providing speed and quality by reusing that content. These templates facilitate higher quality and faster configuration when working with those vendors or similar systems.

PG130

The solution should have the ability to allow authorized solution users to promote rules to permanent tables upon approval through the Change Management Process.

Our data set designer tools enable authorized users to define rules and manage the promotion of those rules to production. We will work with the Department to define governance process to balance efficiency with oversight.



The solution should have the ability to create and modify automated authorized solution userconfigurable business rules that link, classify, and relate rules and rule groups by patterns, mathematical sets, dependencies, and other factors.

Our data set designer tools enable authorized users to define rules and manage that process. We will work with the Department to define governance process to balance efficiency with oversight. Additionally, utilizing HealtheDataLab more advanced users may wish to define advanced logic such as machine learning.

The big data infrastructure of the Platform allows some rules to be incorporated directly into reports. More advanced use cases may require rules that require user specific tables that can be derived by analytic or data science processes. The results of analyses can be stored in a user specific table that is either used solely by that user or shared as appropriate.

PG132

The solution should have the ability to allow authorized solution users to use online screens and services inside the solution to promote rules to user-specific tables.

Our data quality monitoring capabilities includes tools and automated processes to continually monitor and address data issues at ingestion, ensuring consistent collection and enforcement of data integrity rules. The data quality monitoring capabilities includes both the raw data as well as transformed data accessed via reporting. Many rules can be defined through business intelligence tools. More advanced rules require an SQL background. And to the extent that the Department needs help with SQL, Cerner can provide training and/or develop complex rules as part of implementation and operations.

As part of our data governance, Cerner will define which user access. Often there are two types of workflows. Users create rules and promote production independently while limiting who is impacted where rules are limited to one report or to a specific team's reports. Additionally, users create rules and promote production view a review process so that all implications of the change are accounted for before promotion to production. Based upon this governance structure, promotion tasks may be completed entirely online by the Department or with our assistance.

PG133

The solution should have the ability to configure rules to be date-specific including, but not limited to:

Our data set designer tools enable authorized users to define rules including date-specific parameters such as the elements listed below in PG134-PG137. The metadata about each rule is persistent in the Platform automatically and can be reviewed or reported on at any time.

PG134

Date added

The HealtheIntent Platform supports the definitions of simple and complex rules including the date added. Once the rules are created, they can be reused, and include a rule summary and detailed information to facilitate the reuse. Within the application, the summary details and granular detail are searchable for users to easily find previously created rule content.

PG135

Date modified

The HealtheIntent Platform supports the definitions of simple and complex rules including the date modified. Once the rules are created, they can be reused, and include a rule summary and detailed information to facilitate the reuse. Within the application, the summary details and granular detail are searchable for users to easily find previously created rule content.



PG136 S

Start and end dates

The HealtheIntent Platform supports the definitions of simple and complex rules including the start and end dates of a rule that uses one set of logic for 2018 and a different set for 2019. Once the rules are created, they can be reused, and include a rule summary and detailed information to facilitate the reuse. Within the application, the summary details and granular detail are searchable for users to easily find previously created rule content.

PG137

Effective date

The HealtheIntent Platform supports the definitions of simple and complex rules including the effective date. Once the rules are created, they can be reused, and include a rule summary and detailed information to facilitate the reuse. Within the application, the summary details and granular detail are searchable for users to easily find previously created rule content.

PG138

The solution should have the ability to allow authorized solution users to create and modify user-specific or shared business rules that link, classify, and relate rules and rule groups by patterns, mathematical sets, dependencies, and other factors.

Once created, a rule can be share or linked based upon the data governance processes the Department is using. Our data set designer tools enable authorized users to define rules and manage that process. We will work with the Department to define governance process to balance efficiency with oversight. Additionally, utilizing HealtheDataLab more advanced users may wish to define advanced logic such as machine learning.

The big data infrastructure of the Platform allows some rules to be incorporated directly into the reports. More advanced use cases may require rules that require user specific tables that can be derived by analytic or data science processes. And the results of that analysis can be stored in a user specific table that is either used solely by that user or shared as is deemed appropriate.

PG139

The solution should have the ability to allow authorized solution users to apply identifying codes to any record based on rules engine criteria.

The rules engine is highly flexible both in terms of logic and where to write the results of that logic. This includes use cases where data is appended to existing records or produces an entirely different output.

PG140

The solution should have the ability for authorized solution users to receive push notifications based on user-configurable parameters.

The Department can define user-configurable parameters for push notification delivered via email daily. These notifications can be based on any data in HealtheEDW and use simple or complex logic and math.

PG141

The solution should have the ability for authorized solution users to review and validate rules without the need to learn a specialized coding language.

Many rules can be defined through business intelligence tools. More advanced rules require an SQL background. And to the extent that the Department needs help with SQL, Cerner can provide training and/or develop complex rules as part of DDI and operations.



The solution should have the ability to process multi-level rule review and approval that validates logic errors, conflicts, redundancy, and incompleteness across business rules as they are being developed, tested, and implemented.

As is common for configured content, users make changes, validate logic and complete regression testing before content is pushed to production.

PG143

The solution should have the ability for authorized solution users to test rules against replicated data prior to implementation, including full user acceptance testing (UAT) of the rules.

Cerner will work with the Department to determine strategy for environment needs including the data required at each stage (e.g. full replicated datasets). In the case of UAT, the environment would need a full production data replication for state designated users to test out rules as an example.

PG144

The solution should have the ability to track and report rule usage, exception usage, and when rules fail to work as designed, and provide recommendations to resolve rule failure.

The workflow monitor allows authorized user to view the status of all rules and details to facilitate rule failure resolution.

PG145

The solution should have the ability to capture care management data including, but not limited to:

Cerner has extensive experience capturing clinical and claims data from more than 85 unique EHR systems, more than 1,130 unique data connections, more than 185 payer vendors, and other sources to support care management data in both structured and unstructured formats. As the information is received into the HealtheIntent Platform, the data is aggregated and normalized into standardizations to enable DHHR to identify cohorts and report acuity and other desired metrics. Our standard data models support the capture of the below categories of care management data. These data models can be used in ad-hoc reporting and more technical analytics as needed.

PG146

Treatment plan

Yes. Please refer to our response to requirement PG145.

PG147

**Outcomes** 

Yes. Please refer to our response to requirement PG145.

PG148

Prior authorization information

Yes. Please refer to our response to requirement PG145.

PG149

Others as defined by the Department

We understand that DHHR's business needs are ever-changing and will collaborate with you to address those needs in good faith as those needs arise.

PG150

The solution should have the ability to capture compliance incident data including, but not limited to:

Cerner can help identify if there are concerns with provider compliance incidents including the collection and reporting of this data. Our data model supports the persistence of this data from



the provider enrollment system. Additionally, this data along with any other data in the Platform can be used to identify abnormalities or other activity that might lead to incident investigation. Our auditing application supports the ability to audit accesses to the member record and enables incident management through alerting and notification and definition of specific rules for monitoring suspected abuse, providing a proactive approach to safeguarding confidential data. It maintains a consistent, timely and structured approach to identifying, capturing, analyzing and reporting on operational incidents, losses, breaches and financial profit from errors. Additionally, Cerner will work with DHHR and CMS through the defined means to address and confirm compliance.

PG151 Anomalies and adverse actions, such as:

Yes. Please refer to our response to requirement PG150.

PG152 Termination

Yes. Please refer to our response to requirement PG150.

PG153 Suspension

Yes. Please refer to our response to requirement PG150.

PG154 Non renewals

Yes. Please refer to our response to requirement PG150.

PG155 Denial of contracts

Yes. Please refer to our response to requirement PG150.

PG156 Others as defined by the Department

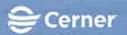
We understand that DHHR's business needs are ever-changing and will collaborate with you to address those needs in good faith as those needs arise.

PG157 The solution should have the ability to capture claims data including, but not limited to:

Our standard claims data model supports the capture of all of the below information and Cerner can localize these data fields to meet any unique needs. Using the HealtheIntent Platform, Cerner has developed claims-based analytics related reports, dashboards, and associated metrics. Cerner is highly experienced with encounter data and can provide insight regarding the quality and types of data needed for MCO performance monitoring, rate-setting, network adequacy/access to care, and public accountability. Our experience with the receiving, processing, translating, and validation of managed care encounter data will also help speed improvements in data integrity and increase credibility of the information. Additionally, the enterprise data warehouse allows users to explore patterns and anomalies which helps foster MCO encounter data integrity. DHHR can monitor participating provider and MCO performance against quality outcomes and trend applicable payment incentives. Analytics are used by our clients to monitor service utilization trends, gain insight into reducing unnecessary/inappropriate utilization of emergency health services, identify ED visits that are "non-emergent" or "primary care treatable", and analyze avoidable readmissions.

PG158 Payment

Yes. Please refer to our response to requirement PG157.



PG159 In-house claim number

Yes. Please refer to our response to requirement PG157.

PG160 Member number

Yes. Please refer to our response to requirement PG157.

PG161 Patient account number

Yes. Please refer to our response to requirement PG157.

PG162 Encounters

Yes. Please refer to our response to requirement PG157.

PG163 Adjudication

Yes. Please refer to our response to requirement PG157.

PG164 Historical payment information

Yes. Please refer to our response to requirement PG157.

PG165 Others as defined by the Department

We understand that DHHR's business needs are ever-changing and will collaborate with you to address those needs in good faith as those needs arise.

PG166 The solution should have the ability to capture encounter data including, but not limited to:

Our standard data model supports the ability to capture encounter data for adjudication and encounter payment history information and Cerner can localize these data fields to meet any unique needs.

PG167 Adjudication and encounter payment history information

Yes. Please refer to our response to requirement PG166.

PG168 Others as defined by the Department.

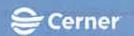
We understand that DHHR's business needs are ever-changing and will collaborate with you to address those needs in good faith as those needs arise.

PG169 The solution should have the ability to capture reference data including, but not limited to:

Our standard data model has industry standard reference data pre-loaded to support the most common use cases. Additionally, the model is highly extendable to unique client needs. These extensions are often detailed and numerous. As part of design, Cerner will work with the Department on a model design to support desired extensions.

PG170 Filing deadlines

Yes. These statuses often include standard and non-standard details.



PG171 Code sets

Yes. We can capture standard and non-standard code sets.

PG172 Drug status (preferred, non-preferred, non-managed)

Yes. These statuses often include standard and non-standard details.

PG173 Procedure code

Yes. This is standard.

PG174 Diagnosis-related group (DRG)

Yes. This is standard.

PG175 Ambulatory payment classification

Yes. This is standard.

PG176 National Correct Coding Initiative (NCCI) information

Yes. This is standard.

PG177 Others as defined by the Department

We understand that DHHR's business needs are ever-changing and will collaborate with you to address those needs in good faith as those needs arise. Cerner can localize these data fields to capture reference data to meet your unique needs.

PG178 The solution should have the ability to capture plan data, as defined by the Department.

Our standard data model is very flexible with the ability to capture plan data and supports the unique plan characteristics of the Department. Additionally, the model is highly extendable to unique client needs. These extensions are often detailed and numerous. As part of design, Cerner will work with the Department on a model design to support desired extensions.

PG179 The solution should have the ability to capture carrier data including, but not limited to:

Our flexible standard data model supports the capture of carrier data including all of the information listed below. These are all part of a standard data model.

PG180 Third-party policy type

Yes. This is part of our standard data model.

PG181 Coverage

Yes. This is part of our standard data model.

PG182 Policy number

Yes. This is part of our standard data model.

PG183 Effective date

Yes. This is part of our standard data model.



**Benefits** 

Yes. This is part of our standard data model.

PG185

Others defined by the Department

We understand that DHHR's business needs are ever-changing and will collaborate with you to address those needs in good faith as those needs arise. Our standard data model and load is very flexible with the ability to capture carrier data and supports the ability to include the unique carrier data characteristics of the Department.

PG186

The solution should have the ability to capture data source contracting information including, but not limited to:

Our flexible standard data model supports the capture of data source contracting information as a part of our standard and this can be extended to meet the Department's unique needs.

PG187

Provider network

Yes. Please refer to our response to requirement PG186.

PG188

Contract

Yes. Please refer to our response to requirement PG186.

PG189

Grievance and appeals information

Yes. Please refer to our response to requirement PG186.

PG190

Others defined by the Department

We understand that DHHR's business needs are ever-changing and will collaborate with you to address those needs in good faith as those needs arise.

PG191

The solution should have the ability to capture member data including, but not limited to:

The HealtheIntent Platform enables the ability to capture all mentioned facets of member level data, including demographics, eligibility, enrollment, grievance and appeals information, and more as defined by DHHR. The individual sources of data are linked via Cerner's Master Person Matching so that all sources can be utilized to make decisions. Master Person Management is an application that compares groupings of records that have the potential to represent a single person and allows you to decide whether they should be linked. The records displayed can be from different data sources or from the same data source (same-source duplicates). The Master Person Index Duplicate Reconciliation application enables the reduction of duplicate registrations within the EHR. The Master Person Management algorithm, combined with subject matter expert review services, designed to identify duplicate records within a source. Identified pairs of duplicate records are then syndicated as an actionable list for organizations to reconcile. This offering includes both a one-time reconciliation to cleanup historical duplicates, as well as on-going reconciliation to maintain accuracy.

PG192

Demographics

Yes. Please refer to our response to requirement PG191.



PG193 Eligibility

Yes. Please refer to our response to requirement PG191.

PG194 Enrollment

Yes. Please refer to our response to requirement PG191.

PG195 Grievance and appeals information

Yes. Please refer to our response to requirement PG191.

PG196 Others defined by the Department

Yes. Please refer to our response to requirement PG191.

PG197

The solution should have the ability to provide authorized solution users with analytical tools including statistical, comparative, and financial trend analyses, as well as case-mix adjustments.

Cerner recognizes that analytical tools span a wide range of capabilities from basic descriptive statistics such as calculating averages and visual representations of trends to advanced capabilities such as multivariate multi-level models, neural networks and cluster analyses. In our experience the vast majority of our clients have the knowledge to utilize the more basic analytic tools with a growing, but smaller, base of users who have the knowledge to utilize the more advanced analytic tools. As such, we offer both HealtheAnalytics to provide basic analytical tools and HealtheDataLab to provide both basic and advanced analytical tools.

For example, in HealtheAnalytics we recently worked with a client who had implemented opioid prescribing policy guidelines and needed to know if it had impacted prescribing patterns among their providers. We were able to convert every opioid prescription into its milligram morphine equivalent (MME), aggregate the prescriptions per member over time, filter to prescriptions that surpassed both the MME and days' supply guidelines, and visualize these prescriptions across their population over time. We found that, in fact, their policy guideline did reduce the frequency of opioid prescriptions that they had deemed dangerous.

While reducing dangerous opioid prescriptions is helpful, research suggests that this change alone may lead members to seek illegal forms of opiates. Therefore, we also conducted an analysis in HealtheDataLab where we leveraged simultaneous negative binomial multiple regressions to assess whether alternative forms of pain treatment such as NSAIDs, Physical Therapy, and Psychological Therapy, as well as the time to receive these treatments could reduce a member's yearly intake of MMEs and reduce the length of their opioid prescriptions. We were able to show with this advanced statistical model that both receiving physical therapy and psychological therapy quickly after presenting with chronic pain significantly reduced both the MMEs and days' supply of any opioid prescription that they were receiving in that same year. This could then be used to further inform policy decisions that would be more likely to reduce chronic pain and reduce reliance on opioids, ultimately saving lives and cost.

Overall, HealtheAnalytics provides DHHR users with the ability to perform basic analytic functions and some ability to perform inferential statistics and machine learning, while HealtheDataLab extends this analytical functionality to cover nearly any analytical tool and technique that has been developed and backed by rigorous research. For example, in HealtheDataLab we have also conducted case-mix adjustments to improve payment reform



models leveraging multi-level models that allow for an assessment of risk profile both between and within a given providers span. We have also leveraged both autoregressive integrated moving averages (ARIMAs) and gradient boosted decision trees (GBMs) to forecast financials for budgeting decisions. Finally, we have used common hypothesis testing techniques such as t-tests to compare outcomes across two groups and in other scenarios where a client needed to ask a very specific question from their data. We encourage DHHR to also leverage our analytic and data science services as we are strategic partners in your analytic journey and can cover resource and knowledge gaps where necessary throughout the life of the contract.

PG198

The solution should have the ability to compare current expenditures by service type and/or member/eligibility category with previous period expenditures to establish a frame of reference for analyzing trends.

HealtheAnalytics tools enables DHHR users to define comparisons across numerous different data elements to provide them with the ability to establish frame of reference for analyzing trends. Users can review member/eligibility categories and compare against previous period expenditures to analyze trends. DHHR users can easily create these comparisons leveraging our embedded tools to create and run reports. Our HealtheAnalytics tools have built in graphics, including the ability to review trends, to review the report in different viewpoints.

PG199

The solution should have the ability to compare actual expenditures against budget to determine control of current and projected financial positions.

As the budget information is made available within HealtheAnalytics, DHHR can then complete a comparison between actual expenditures and budget amounts. Additionally, our HealtheAnalytics tools have out of the box content that includes a spend forecasting algorithm. This algorithm will effectively predict the next fiscal year's expenditures based on current and subsequent years. Our algorithm leverages more than 700 variables, largely coming from claims and eligibility data. This algorithm is in current development and the anticipated release date is early 2020.

PG200

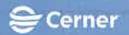
The solution should have the ability to analyze expenditures to identify areas of greatest cost.

As claims and eligibility data are received, our reporting tools enable DHHR to run analysis on those expenditures and identify the areas of greatest cost. Our HealtheAnalytics tools enables the ability to take those analysis further by segmenting the data to identify members with the high utilization, procedures with the greatest cost, and further analysis.

PG201

The solution should have the ability to report on utilization and cost of services against benefit limitations.

As claims and eligibility data is received into the HealtheIntent Platform, DHHR can complete analysis on utilization and cost services against benefit limitations. We also provide DHHR the ability to set benchmarks and thresholds to identify those limits and identify who is reaching those limits based on the individual member and by region. We also enable DHHR to run simulations on utilization and cost data. As DHHR's business needs are everchanging, we will provide the ability to support those needs and help anticipate estimated future cost and utilization. For example, if DHHR looks to expand benefits into a new area, our tools can help estimate the cost that would impact the budget.



The solution should have the ability to provide member enrollment and participation analyses and overall summary, showing utilization rates, payments, and numbers of members by eligibility category.

The Platform enables the ability to ingest member data and present the detailed reports back to DHHR. As DHHR users are working with the reporting tools, they will create reports to review all the above-mentioned details, as well as, segment data for further comparisons, analysis, and utilization review. Our tools will also provide DHHR users to review the reports in a number of graphical representations based on the purpose of the report.

HealtheIntent will ingest 10 years of historical data from a wide variety of sources to enable DHHR to not only review point in time reports, but also allow users to track and trend data over time. Additionally, Cerner has more than 1,000 quality measures pre-loaded into the Platform along with utilization metrics. DHHR will have the ability to create new reports with our non-technical GUI.

PG203

The solution should have the ability to provide expenditure data by service codes including, but not limited to, current versions of:

The Platform provides the ability to ingest claims data and provide expenditure details based on the service code. DHHR can report on specific service codes and review the report based on a number of different criteria, including at the code level for a single provider, specialty, member, or a number of different data points.

PG204

Healthcare Common Procedure Coding System (HCPCS)

DHHR can review expenditure data based on Healthcare Common Procedure Coding System (HCPCS). For example, being able to evaluate the spend on durable medical equipment for a particular subset of specialties, cost based on location, and more.

PG205

International Classification of Diseases (ICD)

DHHR can run reports on expenditures based on ICD-10 codes and review the cost across the member population based on diagnosis code. Additionally, DHHR can further analyze the data to determine the spend based on region and correlate any potential increase and/or decrease in spend in access to care and other variables.

PG206

Clinical modifiers

The HealtheIntent Platform enables DHHR to evaluate expenditure based on clinical modifiers, such as the amount of time the provider is spending with the member, whether or not they are addressing multiple concerns during a single visit or a single concern and requiring the member to return for another visit.

PG207

National Drug Code (NDC)

NDCs enable DHHR to evaluate the expenditure on medications that are being given in the clinic versus as prescriptions for the member to self-administer.

PG208

Revenue codes

DHHR can review expenditures based on revenue codes provided by the claims data and segment that data for further analyze revenue costs based on E&M codes and CPT codes to further evaluate the biggest area of cost.



The solution should have the ability to support determining reimbursement methodologies by providing expenditure data by service codes including, but not limited to, current versions of:

Today, we have over 218 million unique lives in our HealtheEDW and HealtheIntent Platform. HealtheIntent has a library of existing health care and Medicaid-specific report templates built into the application, but it also features out-of-the-box measures that DHHR can start leveraging upon implementation of the HealtheIntent Platform.

This insight will enable DHHR to implement transformative reforms for an effective and fiscally sustainable Medicaid program for years to come. The HealtheIntent Platform is our data integration platform designed to help the state of West Virginia conduct complex analysis of program data for many aspects of Medicaid, including determining reimbursement methodologies.

As clinical and claims data is ingested into the HealtheIntent Platform, DHHR can determine reimbursement methodologies by reviewing expenditure data service codes across each of the defined code sets below, including HCPCS, ICD, Clinical Modifiers, NDC, and Revenue Codes. Analytics can be run across numerous data points to evaluate services across regions based on diagnosis, geographical location, comparing MCOs, and other points to determine reimbursement methodologies.

PG210

Healthcare Common Procedure Coding System (HCPCS)

Yes. Please refer to our response to requirement PG209.

PG211

International Classification of Diseases (ICD)

Yes. Please refer to our response to requirement PG209.

PG212

Clinical modifiers

Yes. Please refer to our response to requirement PG209.

PG213

National Drug Code (NDC)

Yes. Please refer to our response to requirement PG209.

PG214

Revenue codes

Yes. Please refer to our response to requirement PG209.

PG215

The solution should have the ability to analyze provider participation data by criteria including, but not limited to:

As claims data is received the data is linked in the core data model to allow for analysis across any combination of variables, such as payments, services and member eligibility categories. The HealtheIntent platform will aggregate and analyze provider participation in programs based on the identified DHHR criteria. Our solution will enable DHHR users to identify and analyze provider program across various criteria including the items listed payments, services, types of services, and member eligibility categories. For example, the Platform will help DHHR identify which providers are participating in waiver programs and benefit plan programs and services.

PG216

**Payments** 

Yes. Please refer to our response to requirement PG215.



PG217 Services

Yes. Please refer to our response to requirement PG215.

PG218 Types of Services

Yes. Please refer to our response to requirement PG215.

PG219 Member eligibility categories

Yes. Please refer to our response to requirement PG215.

PG220 Others defined by the Department

We understand that DHHR's business needs are ever-changing and will collaborate with you to address those needs in good faith as those needs arise.

PG221 The solution should have the ability to summarize expenditures based on type of federal expenditure and the member's eligibility and program.

As a member eligibility and program data is ingested into the HealtheIntent Platform, DHHR can then use the data to summarize based on the federal expenditure leveraging federal fund codes. Our HealtheAnalytics will enable the user to select the graphical representation of the data that best reflects the summarization of the data.

PG222

The solution should have the ability for authorized solution users to perform prospective and retrospective policy modeling (what-if analyses) on claims edit checking and adjudication rules, claims parameters and payment rules, provider payment rules or amounts, or claims sequencing.

Authorized application users can perform basic retrospective and prospective policy modeling on rules and parameters related to claims processing by leveraging analytic tools in HealtheAnalytics. For example, in 2017 DHHR was awarded a waiver to expand substance use treatment and services to reduce prescription drug overdoses and deaths. A DHHR user could leverage HealtheAnalytics as well as the normalization and standardization logic in HealtheIntent to quickly identify the number of members who experienced opioid overdoses prior to 2017 and the cost to treat these overdoses and compare this to the number of members who experience opioid overdoses after 2017 and associated costs. This would allow DHHR to determine retrospectively if this waiver was an efficient use of state and federal funds.

Additionally, DHHR can identify the proportion of members who experience an overdose and visualize a trend line of this proportion over future years, calculate the efficacy rate of their waiver program, and prospectively estimate the number of overdoses they are likely to prevent in the future. With this said, there are drawbacks to this analytical approach as it inherently ignores variability in the effectiveness of the waiver to prevent opioid dependence, variability in costs to treat dependence and overdoses, projected Medicaid population size changes, and other factors that could impact the actual number of overdoses and associated cost in the future.

As such, policy microsimulations that leverage techniques like Monte Carlo re-sampling to account for variability and account for additional logic such as population changes, can be conducted in HealtheDataLab allowing DHHR to not only provide more accurate projections of KPIs associated with a change in covered services, but also provide a confidence interval around these projections, and estimate unintended and ancillary consequences of this change.



Similarly, these techniques can be applied to changes in provider reimbursement amounts, denial reasons, and other logic associated with claims processing.

PG223

The solution should have the ability for authorized solution users to perform prospective and retrospective policy modeling (what-if analyses) on changes in provider profiles.

HealtheDataLab will enable DHHR users to perform cluster analysis to analyze prospective and retrospective policy modeling on changes in provider profiles, such as the ability to provide analysis across providers with a certain case mix or a change in their case mix. Cerner combines peer-reviewed research and relevant state-specific data to create transparent and reasonable assumptions within our simulation modeling to provide DHHR with a sense of expected outcomes and confidence intervals for policy planning purposes. Additionally, users have the full functionality of these open source programming tools alongside their data. This allows DHHR the ability to build predictive algorithms with well-established machine learning methods such as decision trees, naïve bayes, support vector machines, and neural networks to name a few.

PG224

The solution should have the ability for authorized solution users to perform prospective and retrospective policy modeling (what-if analyses) on changes in member profiles.

HealtheDataLab combines peer-reviewed research and relevant state specific data, as discussed in PG223, to provide prospective and retrospective policy modeling on changes in member profiles based on member attributes that exist in the data. Users can also leverage data that has not been previously leveraged, such as non-clinical data, to derive new groups through clustering or factor analysis. Our data science application will provide DHHR with a sense of expected outcomes and confidence intervals for policy planning purposes.

PG225

The solution should have the ability for authorized solution users to perform prospective and retrospective policy modeling (what-if analyses) on changes in benefit plans.

HealtheDataLab will provide DHHR the ability to combine peer-reviewed research with state-specific data elements to perform prospective and retrospective policy modeling on changes in benefit plans. Users can focus on microsimulation modeling to create a population with similar characteristic through rules based on research and then predict how changes in the benefit plan will impact the members. For example, users could show an increase or decrease in chronic conditions, increased costs, and then see expected outcomes over time.

PG226

The solution should have the ability for authorized solution users to perform prospective and retrospective policy modeling (what-if analyses) on patterns in relationships between disparate data.

HealtheAnalytics can ingest clinical and claims as well as non-clinical data to create relationships between disparate data. HealtheDataLab will enable DHHR users to combine peer-reviewed data with West Virginia specific data to perform prospective and retrospective policy modeling on patterns in relationships between disparate data.

Cerner is currently working with the state of Montana to ingest non-clinical data from the criminal justice system by uploading data from a .pdf document. We are bringing in the data and working to join the data with claims and clinical data along with housing and criminal justice. We are utilizing this data to create policy simulations around housing instability to identify the return on investment of a variety of proposed programs that coordinate services across Medicaid and housing authorities.



The solution should have the ability for authorized solution users to perform policy modeling (what-if analyses) on other criteria as defined by the Department.

We understand that DHHR's business needs are ever-changing and will collaborate with you to address those needs in good faith as those needs arise. Throughout the life of the contract, Cerner will work with DHHR to strategically identify additional instances where HealtheDataLab can perform policy modeling.

PG228

The solution should have the ability for authorized solution users to perform retrospective reviews on claims that appear to have been inappropriately paid, such as:

The Program Integrity Application was built to analyze utilization and billing patterns in order to identify inappropriately paid claims. The Application contains hundreds of pre-defined analytic scenarios that describe atypical utilization or behaviors performed by billing, rendering, ordering, referring and prescribing providers. These reports are automated and contribute to a Provider Risk Score, and can be the basis of Alerts, which notify users when an inappropriate billing pattern occurs.

Additionally, Cerner's HealtheIntent Platform enables DHHR to ingest claims and clinical data to perform retrospective analytics on claims data. As the data is analyzed, DHHR users can identify when and/or if a member has had a claim that has been inappropriately paid. Our solution will help to identify the number of times the member has received the service to identify any duplicate services, excessive units, and coding errors and/or others.

Cerner's HealtheIntent Platform can extract data from DHHR's selected Program Integrity Application. During implementation, we will work with DHHR to address the details, such as required data elements, file format and frequency. Additionally, HealtheIntent can consume data from DHHR's new Program Integrity Application to present the data visually as a component of a user-created program management dashboard for agency executives.

PG229

**Excessive units** 

Yes. Please refer to our response to requirement PG228.

PG230

Duplicate services

Yes. Please refer to our response to requirement PG228.

PG231

Coding errors, or other errors

Yes. Please refer to our response to requirement PG228.

PG232

The solution should have the ability for authorized solution users to perform retrospective reviews to determine whether services and billings were a medically necessary exception to usual practice.

The Program Integrity Application provides analytical results related to the service and billing practices of providers, in order to identify, measure and act on medically unnecessary services or unusual billing practices. The Application contains a suite of Analysis Tools that allow for the identification of a variety of known billing practices and provides non-technical users with the ability to create newly discovered or suspected aberrant billing behaviors and test those behaviors against a universe of claims. The results of these analyses can be used to produce interactive or automated Reports that feed the Provider Risk Score and Alert notifications to users.



Additionally, our ability to ingest detailed clinical data into our platform from claims, eligibility files, EHRs, and other sources provides a wholistic view of the member and the care they have received. Cerner's analytics solution will enable DHHR to define rules and apply those to specific instances to identify when a member's clinical data and the claims information has been identified as incongruent based on clinical guidelines. For example, if a patient who is allergic to penicillin as prescribed or given a penicillin containing medication.

As these rules are defined by DHHR, Cerner and DHHR can work to create clinical logic becomes an ontology which will continually run on the data and identify trends.

PG233

The solution should have the ability to compare encounter data and claims with capitation versus fee-for-service (FFS) payment data to determine optimal utilization and payment scenarios.

As encounter and claims data is received into HealtheIntent analysis can be applied to compare the capitation versus FFS payment data. As the DHHR user review the analysis, they can determine the optimal utilization and payment scenarios through the utilization and quality data core set metrics. Additionally, DHHR will have the ability to leverage our HealtheAnalytics tools to segment subpopulations to perform optimal utilization and payment scenarios to determine which groups should be covered by the MCO and which groups should be covered by FFS. This level of analyzation will support DHHR in efforts to manage costs for Medicaid members across the state.

PG234

The solution should have the ability to report health care quality measures in accordance with the Centers for Medicare & Medicaid Services (CMS) Technical Specifications including, but not limited to:

The HealtheIntent Platform uses the most accurate and current data for producing DHHR and federally mandated reports. HealtheIntent applications features built-in template queries and reports designed specifically for state Medicaid agencies. Cerner continuously updates and improves these reports based on client suggestions and changes in regulatory requirements and health care agencies best practices. Subsequently, most reports and templates built for other clients are available to all clients. HealtheAnalytics can generate the necessary reports as defined by DHHR, for filing all required federal daily, weekly, monthly, quarterly, and annual reports. Further, we will deliver reports to designated users on the production date schedule identified.

The Platform facilitates and provides the capability to produce many CMS reports with more than 1,000 different quality measures, including Adult Core Set, Child Core Set, Home Health Core Set, Substance Use Waiver Measures, CMS-21, CMS-37, CMS-64, and CMS-416. HealtheAnalytics can generate and provide all automated and ad-hoc reports to DHHR within the mutually agreed upon timeframes and within the report generation scheduled. The application will provide the ability to store, retrieve, modify, and execute queries on a scheduled or ad-hoc basis and allow all reports to be executed at various time intervals (e.g. daily, weekly, monthly, quarterly). HealtheAnalytics can generate all reports in a format, medium and timeframe acceptable to DHHR and CMS, without manual intervention or manipulation of data. These reports are designed such that output directly matches the format required by CMS to allow for delivery without manual reformatting.

PG235

**Adult Core Set** 

Yes. Please refer to our response to requirement PG234.



PG236 Child Core Set

Yes. Please refer to our response to requirement PG234.

PG237 Health Home Core Set

Yes. Please refer to our response to requirement PG234.

PG238 Substance Use Disorder (SUD) Waiver Measures

Yes. Please refer to our response to requirement PG234.

PG239 Others identified by the CMS and/or the Department

We understand that DHHR's business needs are ever-changing and will collaborate with you to address those needs in good faith as those needs arise. Additionally, Cerner is committed to staying current with both DHHR regulatory updates and CMS regulatory updates and applying those updates to the HealtheIntent Platform within the mutually agreed upon timeframe.

PG240

The solution should have the ability to provide on an annual basis pre-built queries for the Centers for Medicare & Medicaid Services (CMS) Adult Core Set, Child Core Set, Health Home Core Set, Substance Use Disorder (SUD) Waiver Measures, and others identified by CMS and/or the Department, and the Vendor should review the queries with Department staff once they are complete within a timeline agreed upon with the Department.

HealtheAnalytics will provide DHHR with CMS-defined reports to meet the Adult Core Set, Child Core Set, Home Health Core Set, Substance Use Disorder Waiver Measures, and others to meet CMS reporting requirements on an annual basis. Additionally, Cerner will provide DHHR with reporting updates as defined by CMS.

PG241

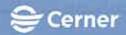
The solution should maintain all historical queries for the Centers for Medicare & Medicaid Services (CMS) Adult Core Set, Child Core Set, Health Home Core Set, Substance Use Disorder (SUD) Waiver Measures, and others identified by the Department and/or CMS for a minimum of ten (10) years.

The HealtheIntent Platform persists both historical data and historical queries. We do not purge historical data or historical queries. Historical data can be used in any report to understand quality measure trending over time to understand sub-populations. Authorized users can review historical queries for CMS Adult Core Set, Child Core Set, Home Health Core Set, Substance Use Disorder Waiver Measures, and other queries completed by DHHR users.

PG242

The solution should have the ability to report state-defined healthcare quality measures in accordance with specification criteria from various measure stewards such as:

The HealtheIntent Platform has numerous embedded healthcare quality measures in accordance with specification criteria from various measure stewards. Cerner's extensive experience supporting our traditional health care clients and Medicaid clients has enabled us to create an extensive library of quality measures to allow reporting to a number of different federal agencies and programs. As part of our implementation strategy, we will conduct strategy sessions to identify any criteria required by measure stewards that are not included in our available content, recommend best practices based on our experience, and work with you to refine the approach based upon your feedback. Additionally, DHHR will have the ability to independently create additional reports to report on quality measures. Our data science team can work with DHHR to create more complex reports to meet quality measures based on state-defined quality measures.



Data provided by DHHR will be captured and maintained to support state and federal reporting requirements. Cerner provides template queries and reports built for state Medicaid agencies. We provide ongoing releases of enhancements for reports based on client suggestions as well as regulatory requirements and health care agencies best practices. The Platform provides the capability to produce many CMS reports, including a catalog of typical MAR reports as well as the suite of Medicaid and CHIP Business Information Solution (MACBIS) reports such as CMS-21, CMS-37, CMS-64, CMS-372 and CMS-416. Cerner generates the reports that include information for the CMS-64 and CMS-21 in a format that will support manual entry into the CMS automated Medicaid Budget and Expenditure System/State Children's Health Insurance Program Budget and Expenditure System (MBES/CBES).

PG243 Pharmacy Quality Alliance (PQA)

We are currently in development process with Pharmacy Quality Alliance (PQA). This will be available in late 2020.

PG244 National Quality Forum (NQF)

We use NQF as a source for many of our pre-loaded measures, including Clinical Standard. Additional measures can be built separately if DHHR requires distinct quality reporting.

PG245 National Committee for Quality Assurance (NCQA)

We have experience leveraging National Committee for Quality Assurance (NCQA) quality measures in the HealtheIntent Platform.

PG246 Healthcare Effectiveness Data and Information Set (HEDIS) Measures

We are currently in development process with HEDIS Measures and will be certified in 2020.

PG247 The Joint Commission (TJC) National Quality Measures

We use The Joint Commission National Quality Measures as a source for many of our preloaded measures, including Clinical Standard. Additional measures can be built separately if DHHR requires distinct quality reporting.

PG248 Centers for Medicare & Medicaid Services (CMS) Measures

We have pre-loaded CMS measures for both Accountable Care Organizations and MIPS.

PG249 U.S. Office of Population Affairs (OPA)

We are currently using U.S. Office of Population Affairs as a source for Clinical Standard.

PG250 Agency for Healthcare Research and Quality (AHRQ)

We are currently using Agency for Healthcare Research and Quality within our cost and utilization application.

PG251 Centers for Disease Control (CDC)

We are currently using Centers for Disease Control as a source for many of our pre-loaded measures, including Clinical Standard. Additional measures can be built separately if DHHR requires distinct quality reporting.



Others as identified by the Department

We understand that DHHR's business needs are ever-changing and will collaborate with you to address those needs in good faith as those needs arise.

PG253

The solution should provide the ability to produce multidimensional, flexible, ad hoc reports across business functions which meet reporting needs including, but not limited to:

HealtheEDW is comprised of embedded industry leading business intelligence tools—SAP BusinessObjects and Tableau—which enables users to visualize and analyze data, create workbooks, visualizations, dashboards, and stories. It supports data discovery and graphical and geographical reporting. Our standard and custom report dashboards provide a face up view related to analytic focuses with the ability to drill down for more information. SAP BusinessObjects and Tableau provide outputs that are presentation ready and include numerous options to explore data graphically as well as apply analytical processing such as:

- Regression lines to define trends
- Parameters to dynamically alter what the visual represents
- Dashboards support drill-down capabilities to explore data further

The HealtheIntent Platform supports the initiation of queries/reports through various methods including on-demand and scheduled requests for the reporting needs required below. As part of design, DHHR and Cerner will agree to a queries/report generation schedule. This schedule will be implemented in HealtheEDW and visible within the application. Views of the schedule include details for each individual query/report as well as aggregate views. As new content is added, that schedule will be updated, and updates will be reflected in the application. Reports will be generated based on that schedule.

#### PG254

Financial reporting

Financial reporting is the basis of HealtheAnalytics which has embedded financial reporting content that DHHR can leverage. DHHR can monitor financial dashboards where queries run on scheduled and can be generated on-demand. Our experience with our traditional health organization clients and Medicaid clients have positioned us to deliver this ready to use content and the flexibility of the Platform enables DHHR to augment or build new reports as needed to meet your financial reporting needs.

# PG255

**Budget forecasting** 

We offer a SaaS spend forecasting algorithm that utilizes over 700 features to predict healthcare expenditures by fiscal year. For more customized forecasting, HealtheDataLab offers open source data science tools, which contain well known mathematical modelling techniques for time-series forecasting such as ARIMA, SARIMA, growth curve models and Kalman Filters. DHHR users and/or our data science team can use HealtheDataLab to develop forecasting models, project expenditures, and perform cost/benefit analyses on an ad-hoc basis. Forecasting models can then be embedded in BusinessObjects or Tableau visualizations to reach a broad DHHR audience.

PG256

Fiscal planning and control

Yes. Please refer to our response to requirement PG253.



PG257 Claims payment accuracy

Yes. Please refer to our response to requirement PG253.

PG258 Expenditures

Yes. Please refer to our response to requirement PG255.

PG259 Timely reimbursement analysis

Yes. Please refer to our response to requirement PG253.

PG260 Cost/benefit analysis

Yes. Please refer to our response to requirement PG255.

PG261 Eligibility and benefit design

Yes. Please refer to our response to requirement PG253.

PG262 Geographical analysis

HealtheAnalytics enables users to visualize and analyze data, create workbooks, visualizations, dashboards, and stories. It supports data discovery and graphical and geographical reporting using the embedded business intelligence tools capabilities, Tableau. Our standard and custom report dashboards provide a face up view related to analytic focuses with the ability to drill-down for more information. We can also leverage Geographic Information System capabilities for further analysis, such as drive time analysis.

PG263 Program planning

HealtheIntent Platform will enable DHHR to leverage clinical and claims data for program planning. For example, the ability to track and monitor member utilization and the opportunity make a program change to reduce cost or increase access to care.

PG264 Policy Analysis

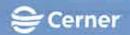
DHHR will benefit from the ability to deploy advanced analytic approaches that blend best-inclass analysis with distinctive visualization. The HealtheIntent Platform facilitates the delivery of statistical analysis or predictive model that is highly tailored to DHHR's specific needs. For example, forecasting cost and utilization under Medicaid expansion or the implementation of a novel program or policy changes. With our flexible model, DHHR data scientists will have the ability to perform these analytics independently. We also have a data science team available to support DHHR in perform advanced statistical analysis.

PG265 Federal waiver program evaluation

Yes. Please refer to our response to requirement PG253.

PG266 Adequacy of and access to care

Cerner's claims and clinical data along with our ability to create geographical reports will enable DHHR to review adequacy and access to care. We leverage Geographic Information System to measure access to care and run drive time analysis for members. For example, DHHR can review the number of care providers in an area and compare that to the member's clinical and claims data to review chronic conditions, outcomes, and more.



Quality of care

As claims and clinical data is ingested into the Platform, DHHR will have the ability to create and run metrics against the data to track and measure quality of care. In combination with HealtheRegistries, DHHR will have the ability to drill into specific populations and view scorecards representing how providers and members are performing.

PG268

Outcomes assessment

HealtheRegistries contains our registries and scorecards capability, which is a chronic condition and wellness registry application that enables DHHR to identify gaps in care and attribute, measure and monitor members at an individual or population level. This level of integration will allow for the ability to track and monitor outcomes across populations, providers, and MCOs.

HealtheRegistries aggregates data across multiple disparate sources and normalizes the data, enabling advanced decision support, predictive algorithms, population identification, and advanced analytics. HealtheRegistries also provides the ability to effectively identify, score, and predict risks of individuals or populations to allow targeted interventions to be implemented. Algorithms based on industry best practices, (CMS, HEDIS, and more), that are used to identify the appropriate registries and measures for each individual and/or by MCO. It offers the opportunity to drill-down to the supporting logic behind each registry and measure for everyone. DHHR can drill-down on targeted individuals or populations to understand many things, such as which members utilize a high number of services and which members are at risk.

PG269

Disease management.

The Platform combines clinical and claims data to enable DHHR to track and monitor disease management at both the member level and the provider level. Users can evaluate which providers are managing their member's chronic conditions by reviewing which members have participated in preventive care activities, have had the recommended treatment for specific conditions, and more.

PG270

Managed care plan planning and analyses

Yes, Please refer to our response to requirement PG253.

PG271

Others as defined by the Department

We understand that DHHR's business needs are ever-changing and will collaborate with you to address those needs in good faith as those needs arise.

PG272

The solution should have the ability to calculate Department-specified calculations in temporary arrays allowing for multi-step array-based queries.

The power of HealtheAnalytics enables DHHR to calculate numerous Department-specialized calculations in temporary arrays allowing for multi-step array-based queries. For example, temporary arrays are defined as the ability to identify everyone in a program and then break down additional details such as their individual costs for the year. HealtheAnalytics will enable both non-technical and advanced statistical users within DHHR to build these queries on their own or rely on our data science team to assist and/or build the queries for the Department. Once built, the subsets can be saved and leveraged in additional queries or used for future analysis. These queries can be run on-demand or as scheduled requests.



The solution's data access component should allow the authorized solution user to have the ability to type or select from any menu options available in the solution that include measures, dimensions, subsets, and time periods.

All reports, templates, queries, imported data and analytics are centrally stored within the Platform. When content is stored, it is saved alongside metadata that helps organize and understand its implications. Details such as name, description, author, status (e.g. draft, final, archived) and history are available. These details help users understand the purpose of content and identify an expert to follow up with for any outstanding questions. To facilitate locating content in a large library, users can perform searches. Results include details about that content with links to access more detailed metadata. There are also advanced search capabilities to filter on complex criteria. Additionally, HealtheAnalytics supports a continuum of users ranging from non-technical users to advanced data scientists in report writing. Cerner offers a non-technical GUI to support those non-technical users in writing reports. HealtheAnalytics also offers more complex reporting writing for those advanced users using SQL. This application will enable DHHR users to create and generate numerous reports ranging from very simple analysis to multi-step, multi-dimensional reports across populations, time periods, and other defined data points.

PG274

The solution's data access component should provide the authorized solution user with search capability for all unique values for macros whose size exceeds system limitations.

The HealtheIntent Platform is powerful tool that will enable DHHR to aggregate, normalize, and analyze large data sets and allow authorized users to easily search for specific unique values within the data set, regardless of size. We have built in limitations to prevent a report from being generated that exceeds system limitations and causes system slowness. Cerner's massive processing power has enabled clients to generate reports that can be run over night now runs in just under 30 seconds. The Platform enables the ability to handle massive amount of data and generate reports leveraging large data sets, including multi-year, multi-step analysis. In the event a massive report does cause system degradation, our system will log and monitor the issue so it can be correct and prevented in future occurrences.

PG275

The solution should have the ability to capture data collected by each contracted Managed Care Organization (MCO) including, but not limited to:

The HealtheIntent Platform enables the ability to capture data collection by each contracted MCO, we will work with DHHR to identify appropriate map and aggregate the data to ensure continued data quality. While we routinely ingest claims and clinical data, we also have the ability to ingest non-traditional data sources as well. Today, we collect housing data, air pollution data, criminal justice systems, and others to enable comprehensive analysis and comparisons for clinical and non-clinical data points by mining the data and working to complete those data joins to identify patterns.

PG276

Social determinants of health

We understand the importance of including social determinants of health when discussing health care and managing the health of a population. Our HealtheAnalytics enables the ability to ingest social determinants of health data and provide analysis based on the needs of DHHR. For example, Cerner is currently working with the state of Montana to ingest housing and homeless shelter data and create data joins with claims and clinical data. As those joins are created, the data can be mined to identify patterns.



Others as defined by the Department

We understand that DHHR's business needs are ever-changing and will collaborate with you to address those needs in good faith as those needs arise.

PG278

The solution should have the ability to produce a hospice report comparing hospice days to inpatient days for each enrolled hospice member and for all hospice providers.

Clinical and claims data will enable DHHR users to complete analysis on hospice days to inpatient days for each enrolled hospice member and for all hospice providers. The Platform will provide DHHR with the ability to segment members within population subsets and run analytics for comparisons at both the member and the provider level. We currently report on state-specific waivers that were designed for the purpose of caring for hospice and other long-term care members in the community instead of in a facility. The report evaluates trends in services and per member costs by dozens of special populations and provider types and specialties.

PG279

The solution should track the impact of the Medicare drug program.

As clinical and claims data, including pharmacy data and full Medicare data, is received into the HealtheIntent Platform the clinical and claims data will be matched through Person Matching algorithms. DHHR can track the impact of the Medicare drug program and identify those members who are dual enrolled in Medicaid and Medicare. DHHR users can analyze and compare the members who enrolled in the Medicare drug program versus those who are not. This level of analysis will provide insights to access to medications, correlation to chronic conditions, and understanding which benefit plan paid for the medication.

PG280

The solution should provide information required for the review and development of medical assistance policy and regulations.

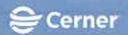
We understand that the business needs of DHHR will change throughout the life of the contract, the HealtheIntent Platform will provide the ability to perform analytics which can drive the review and development of medical assistance policy and regulations. The Platform will provide DHHR with the flexibility to independently create the reports needed the drive the development of policy and regulations. DHHR will also have access to our standard out-of-the-box reports to complete analysis on the full array of the available data set.

PG281

The solution should support the projection of the cost of program services for future periods.

Within HealtheAnalytics visualizations, DHHR users and/or our operational support staff can setup various timeframes and filters throughout each report to view historical expenditures. For more accurate forecasting and projections, HealtheDataLab offers Open Source Data Science Tools, which contain well known mathematical modelling techniques for time-series forecasting such as ARIMA, SARIMA, growth curve models and Kalman Filters. DHHR users and/or our data science team can use HealtheDataLab to develop forecasting models, project expenditures, and perform cost/benefit analyses on an ad hoc basis. Forecasting models can then be embedded in BusinessObjects or Tableau visualizations to reach a broad DHHR audience.

We understand the importance of accurate budget forecasting for running a successful Medicaid program which is why Cerner offers a SaaS spend forecasting algorithm to aid Medicaid departments in requesting funding levels each fiscal year. HealtheAnalytics will enable DHHR to project the projection of program service costs for future periods and project program costs for new programs utilization simulation reports. We also recognize that forecasting and machine



learning are still somewhat new to health care and so there are likely many more problems for which forecasting would provide value. As such, we offer HealtheDataLab to provide users with access to the EDS data, train and test forecasting models, and deploy these models back out to the HealtheIntent Platform to be used in reporting. It requires a unique skillset to develop a forecasting model and often times resources with these skillsets are in short supply. Therefore, our data science team will work in good faith with DHHR to build out custom forecasting models as needed throughout the life of the contract.

PG282

The solution should meet Transformed Medicaid Statistical Information System (T-MSIS) reporting timelines, providing T-MSIS tapes for submission in accordance with the tape delivery schedules.

Cerner has an out-of-the-box model that is proven with other clients. We are currently configuring and implementing MMIS data elements for the T-MSIS data model for submission to CMS for federal reporting. With Cerner, T-MSIS technology is reusable and will allow for faster deployment across our Medicaid client base, as new quality measures are released and/or updated, West Virginia will automatically receive those updates. We will enable report delivery on a CMS defined schedule and include tape delivery schedules, with electronic delivery through APIs.

As an example of our participation in the data governance meetings, we are currently supporting the state of Montana migration from MSIS to T-MSIS and other federal reporting. Our participation has been able to mitigate risks that have been raised in the data governance meeting as well as knowledge transfer processes and procedures to the state of Montana that they have been able to use in their discussions with CMS.

Data provided by DHHR will be captured and maintained to support state and federal reporting requirements. We provide template queries and reports built for state Medicaid agencies. We provide ongoing releases of enhancements for reports based on client suggestions as well as regulatory requirements and health care agencies best practices. Our application provides the capability to produce many CMS reports, including a catalog of typical MAR reports as well as the suite of Medicaid and CHIP Business Information Solution (MACBIS) reports such as CMS-21, CMS-37, CMS-64, CMS-372 and CMS-416.

Cerner generates the reports that include information for the CMS-64 and CMS-21 in a format that will support manual entry into the CMS automated Medicaid Budget and Expenditure System/State Children's Health Insurance Program Budget and Expenditure System (MBES/CBES). Cerner has an out of the box T-MSIS module that is proven with other clients to significantly expedite config. West Virginia will benefit from quality improvements and updates over the years. Submission of T-MSIS is set up based on mutually agreed upon schedules and CMS requirements for electronic delivery through APIs.

PG283

The solution should comply with the information reporting requirements of section 6041 of the Internal Revenue Code (26 U.S.C. 6041). Section 6041 requires the filing of annual information returns showing amounts paid to providers, who are identified by name, address, and social security number or employer identification number.

Cerner does not anticipate receiving FTI pursuant to the State's response to question Q189 submitted as part of this RFP. In the event Cerner is required to receive FTI data, Cerner agrees to work in good faith with the state using commercially reasonable efforts to achieve compliance with the applicable IRS publication 1075 requirements. Cerner agrees to host and maintain your



Enterprise Data Solution (EDS) at a site within the continental United States. All hosting sites adhere to current industry best practices.

While we do not anticipate receiving FTI, we do have some engineering and support teams located outside of the United States. We use offshore resources to provide 24/7 "follow the sun" support for our applications. We reserve the right to utilize the best associate to resolve issues, no matter the physical location of that associate. No state data shall be stored or hosted outside the United States without the written consent of the state. Contractor may provide temporary access to data outside the United States for its personnel, subcontractors or agents solely as necessary to perform the Services under the Agreement, provided that if data is so accessed outside the United States, Contractor shall require that its personnel, subcontractors and agents comply with the requirements of the Agreement (including the BAA) concerning the protection of the confidentiality and security of the data.

PG284

The solution should provide the ability to create a quarterly report on expenditures under the Money Follows the Person program based on the Department's rules.

The Platform enables the ability to accept clinical and claims data with the member's benefit enrollment status, including the Money Follows the Person program, to provide quarterly analytics based on DHHR's rules. We will support DHHR with the reporting for Money Follows the Person, including the CMS372 report on a federally defined reporting schedule. The Platform enables DHHR to complete further analysis beyond quarterly reports enabling the ability to compare regions, compare cohorts, and more with the various graphical representations based on the data. Cerner is currently working with the state of Montana to report the CMS372 Money Follows the Person requirements. Montana is tracking the Money Follows the Person between members are transitioning between venues of care and tracking the expenses related to home care versus higher levels of care. For example, tracking and trending the amount of money spent on member's care in a SNF versus at home and provide analysis on the average money spent in each venue and the average money saved.

PG285

The solution development efforts should be tied to and supportive of agency goals and objectives including, but not limited to:

We understand the importance of delivering an analytics application that is current and stays current with future development efforts to align and support agency goals and objectives. Our implementation and ongoing operations strategy will be to work with DHHR to ensure your required content, as defined in this RFP, will be configured within the application. Cerner is committed to focusing development efforts to continue to meet the Medicaid business needs for DHHR and our other Medicaid clients, including managing long term care costs, acute care, and others. Today, we provide the ability for DHHR to leverage out-of-the-box reporting content track and analyze the clinical and claims data ingest into the HealtheIntent Platform. DHHR can also have the flexibility to independently create reports that analyze the available data set based on organizational and business needs.

PG286

Managing long term care costs

Our HealtheAnalytics application enables DHHR to identify those members who are accessing long term care facility and review the associated claims with those members. It will provide DHHR with the insights needed to track quality measures, health outcomes associated with those members, and work with MCOs to identify the high utilization, high costs members.



PG287 Acute care

HealtheAnalytics can enable DHHR to track and monitor goals and objectives tied to acute care. It provides DHHR with the ability to track quality measures, health outcomes, identify other trends such as length of stay based on the condition, and more. The Platform identifies those members who are at risk for readmission or have been readmitted with in the defined time frame and needs to be managed differently by the MCO.

PG288 Others as defined by the Department

We understand that DHHR's business needs are ever-changing and we will collaborate with you to address those needs in good faith as those needs arise.

PG289

The solution should have the ability to meet Department-defined time frames and prioritization for processing authorized solution user requests.

The power of the HealtheIntent Platform will provide DHHR with the ability to leverage standard out of the box content that has been curated as a result of our experience across both our Medicaid client base and our traditional health organization clients. Additionally, DHHR will have the ability to independently create content using HealtheAnalytics to ensure you have the report capabilities you need. As part of our implementation and operations strategy, Cerner and DHHR will conduct strategy sessions to recommend best practices based on our experience and work with you to refine our approach based on your feedback. In the event DHHR identifies application user requests that cannot be fulfilled through DHHR independently defined content, we will work with you to address those requests through our best practice recommendations. For any new functionality created as a result of an application user request, we will collaborate with DHHR to complete the functionality within the mutually agreed upon timeframe.

# 4. PROGRAM INTEGRITY

Refer to the relevant business specifications located in *Appendix 1: Detailed Specifications* and pertinent narrative in *Section 4: Project Specifications* in this RFP to cover solution capabilities in this area. The Vendor should describe its approach to Financial Management below. The narrative response for this category should be organized using the appropriate subject matter area as per *Appendix 1: Detailed Specifications*.

Healthcare fraud, waste, and abuse is an increasingly complicated problem, costing the U.S. an estimated \$100 billion per year. Medicaid Claims Analysis has long been the primary offering of Program Integrity Solutions in the past. This involves "big data" analysis of millions of Medicaid Claims to identify aberrancies that may indicate, fraud, improper payment, or poor quality of care. The failing of these solutions, and common complaint of PI Directors nationwide, in addition to not having sufficient analytic power to correctly identify aberrancies in the data, is that they lack any meaningful case management and automated workflow to deal with those aberrancies that are identified.

Legacy analytic tools currently serving the market were built to address the transaction-based problems of the past. They depend on unscalable, static models and algorithms that require constant maintenance and overwhelm investigators and analysts with hundreds of low-quality leads, high false positives, and no effective process automation to manage identified cases. This ineffective model has led to increased resource costs and forces time-strapped



investigators and analysts to make sense of the data without the context needed to build strong cases.

Our proposed Program Integrity Application brings a modern approach to this antiquated model. It is a flexible, continuously configurable system, able to identify true aberrancies and track these aberrancies through the investigation and recovery lifecycles.

Experience the Speed of Innovation with the Program Integrity Application—an integrated combination of cutting-edge claims analytics and best-in-class case management. Our subcontractor, Tyler Technologies, Inc. (Tyler) is the largest publicly traded, public sector-focused IT software company in the United States, serving federal, state, and local government entities; empowering them to build safe, vibrant communities. A nationally recognized provider of integrated system solutions and professional services, Tyler serves clients in more than 21,000 installations across 10,000 state and local government locations in all 50 states, Canada, Puerto Rico, the United Kingdom and Australia, as well as more than 200 U.S. federal agencies. Key indicators of our successful deployments, include:

- 97 percent customer retention rate
- 80 percent of customers have 2 or more deployments
- 97 percent of Federal Agencies with 500 or more employees

From financial management and property taxes to courts and public safety, Tyler creates, delivers, and supports software solutions and services making it easier for local governments and schools to manage their complex day-to-day business functions. Our singular focus on the public sector gives us a unique advantage to deliver outstanding products to our thousands of clients. The advantage is fast, tailored, and interactive analytics and reports, served to users in a simple, easy-to-understand interface. The Application offers:

- Purpose-built behavioral analytics for Medicaid program integrity that go beyond spreadsheets to deliver actionable investigative findings
- Reports, alerts, and analysis results tailored to unique needs of clients and policy
- Simple, easy-to-use interface for all levels of users
- Single, integrated experience—identify outliers; pinpoint billing schemes; generate leads; develop evidence; discover hidden relationships; build cases

In an implementation with one state's Medicaid Agency, the Application supported:

- Over \$375 million in identified overpayments during a three-year period
- Over \$170 million in costs saved from preventing improper payments during a three-year period
- Over \$17 million in recoveries from investigations and audits in just 2 years
- Over \$5 million secured since 2016 from Medicaid False Claims Act judgments

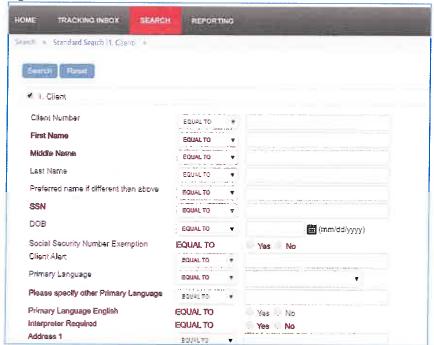
The Application caters to the workflow of Program Integrity users by identifying inefficiencies, outlier behavior, excessive or improper billings, fraudulent provider behaviors, and useless or poor quality of care—and then guides users through the entire case management workflow from base creation to recovery or prosecution. The Program Integrity Application gives users at all levels of technical expertise unprecedented visibility into program data, to make informed critical decisions and optimize resources.



The solution should have the ability to search, sort, filter, and group by any field to support investigative case management.

The Program Integrity Application supports searching, filtering, and grouping by any field to support both investigations and the management of cases. The application provides users with a powerful, multilevel searching capability which allows users the ability to search any data captured within the system. Additionally, our search engine allows users to set parameters such as "greater than," "less than," or "equal to." The user's role and permissions determine what results are displayed; a user cannot see a record that he/she is not authorized to see.

Figure 11 Searchable Fields with Permissions



The Advanced Search capabilities of the application allows users to create, publish, schedule, and distribute ad hoc/custom reports. The advanced search tool set is a more powerful and robust version of the standard search. In addition to the criteria available with the standard search, it allows a combination of joins, custom view of the data returned, and allows other criteria similar to writing a SQL query. The advanced searches have the advantage with the ability for them to be saved and shared based on user's roles permissions. The "google-like" searches allow free form entry of search terms and return results based on context and content and degree of similarity to the search terms entered.

The application's searches allow for individual or multiple fields (e.g. First Name, Last Name, Address, Services, etc.) to be searched at the same time. Advanced searching allows a user to apply multiple criteria to a single field.



Figure 12 Advanced Search Allows Multiple Joined Tables



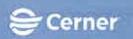
The solution should have the ability to associate providers with their members and members with their providers to view those relationships and to access all associated data including, but not limited to:

The Program Integrity Application allows association of providers with members and members with providers using both Analysis Tools and Profile Pages. Analysis Tools are dashboards or interfaces through which users can view, summarize, and filter data to answer questions. For example, in the *Provider Summaries: Professional* tool, users can see services paid to a provider summarized by provider, member or procedure, and then "drill down" to see specifics such as member identity or even information about the individual services. This tool also allows users to easily understand how different providers share recipients with each other, a possible indicator of fraudulent activity.

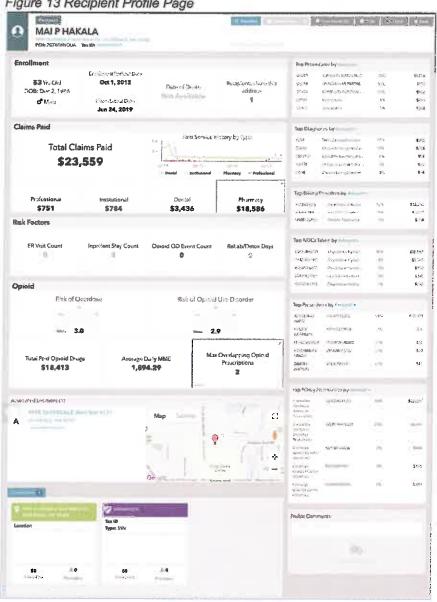
Profile Pages can be thought of as the hub of the Application. Every "thing" within the data, from provider and members to locations and account numbers, has its own Profile Page. A Profile Page is a body of intelligence about that thing, containing attributes, statistics, metrics, charts, maps, and connections. Additionally, every metric and chart on a Profile Page can be clicked to drill down to the underlying information or data that created it. Thus, a member or *Recipient Profile Page* contains information such as: which providers have serviced that member, the volumes of those services and the types of services by procedure, DRG and/or diagnosis codes.

Pl003 Member records

A Recipient Profile Page, as seen in the following figure, uses metrics, charts, and maps to show the relationship between a member and his or her providers. This Profile Page directly incorporates information from both member and provider enrollment records, so both enrollment and eligibility information and status can be factored into the information provided.





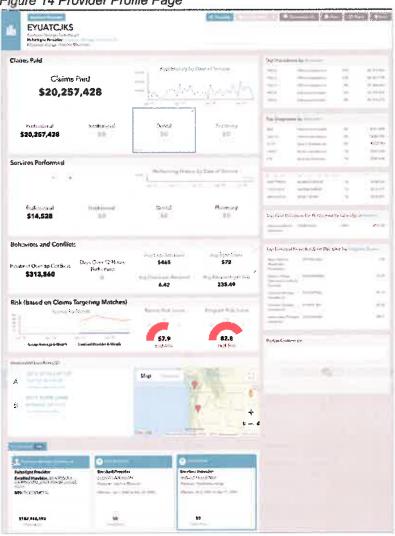


P1004 Provider records

The following figure shows a Provider Profile Page, where metrics, charts and maps show the relationship between a provider and its members. This Profile Page directly incorporates information from both member and provider enrollment records, so both enrollment and eligibility information and status can be factored into the information provided.



Figure 14 Provider Profile Page



Pi005 Prior authorizations

The Program Integrity Application can utilize prior authorization data to better understand – and surface to users—the relationship between providers and the prior-authorized services they render to members.

PI006 Member case management data

The Program Integrity Application utilizes member case management data in variety of ways for more effective and efficient data analysis related to program integrity. For example, through direct integration, the Application knows which members are currently or previously under investigation, review, or other action, and can instantly incorporate this knowledge into integrity related analysis, using filters to "include" or "exclude" members based on a case management status.

Pl007 Claim/encounter records when accessing any one of them in the solution



The Program Integrity Application supports both fee-for-service (FFS) claims and encounter records into all claims-based analysis. These records can be "stacked" to see information and relationships across both claim types or filtered to see information and relationships for one claim type or the other separately. Most importantly, the Application can show and report situations where members are receiving the same services through both FFS and encounter records, and which providers are perpetrating this behavior.

P1008

The solution should have the ability to associate providers to providers and providers to members to view those relationships and to access all associated data including, but not limited to:

The Program Integrity Application can show the relationships between one or more providers in multiple ways as described in the following examples:

Analysis Tools—These are dashboards or interfaces through which users can view, summarize, filter and report data to answer questions. Users can see services paid to a provider summarized by provider, member, or procedure, and then "drill down" to see specifics such as member identity or even information about the individual services. This tool also easily shows how different providers share recipients with each other, over all time, within a particular time frame, or even for specific services.

The Link Graph—Using a graph based visual display, the Application can show the relationships between providers and between providers and members, should those providers and members share common things, such as address, telephone number, bank account, tax ID or SSN. The graph is particularly useful in finding providers associated with another "known bad" provider, and in finding providers who are also members.

**Provider Affiliations**—This toolset allows users to explore and report information regarding the shared ownership of provider entities. Here, the Application shows individuals or companies that own multiple provider entities and how ownership has changed hands or evolved over time.

PI009

Member records

The Link Graph, as shown below, visually portrays how entities within the data—providers, members, owners, locations, tax IDs, etc.—connect to each other. Users can expand from any node to explore links beyond the first degree.







PI010 Provider records

The Provider Affiliations tool, shown below, shows information about the way entities—people or companies—own providers. This summary view shows how many providers individual entities own.

Figure 16 Provider Affiliation Analysis - Summary

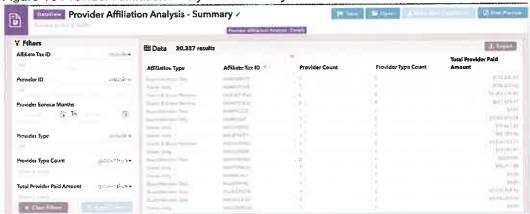
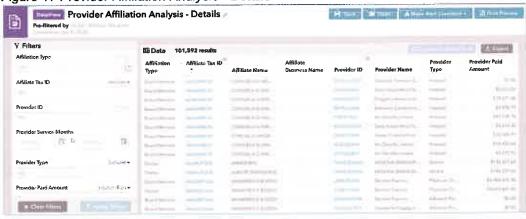


Figure 17 Provider Affiliation Analysis - Details



PI011 Prior authorizations

The Program Integrity Application can utilize prior authorization data to better understand – and interactively surface to users—the relationship between providers and the prior authorized services they render to members.

PI012 Member case management data

The Program Integrity Application can utilize member case management data in variety of ways for more effective and efficient data analysis related to program integrity. For example, through direct integration, the Application knows which members are currently or previously under some sort of investigation, review or other action, and can instantly incorporate this knowledge into integrity-related analysis, using filters to "include" or "exclude" members based on a case management status.

PI013 Claim/encounter records when accessing any one of them in the solution



The Program Integrity Application can utilize both FFS claims and encounter records into all claims-based analysis. These records can be "stacked" to see information and relationships across both claim types or filtered to see information and relationships for one claim type or the other separately. Most importantly, the Application can show and report situations where members are receiving the same services through both FFS and encounter records, and which providers are perpetrating this behavior.

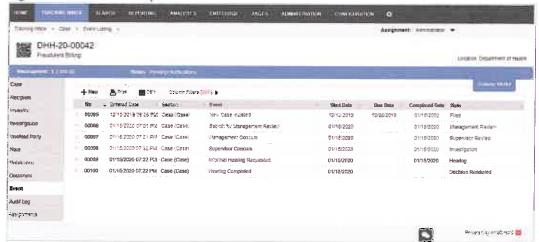
PI014

The solution should include an Investigative Case Management component with the ability to capture, store, track, and report on all actions, determinations, and resolutions through to final resolution including, but not limited to:

The Program Integrity Application is a highly configurable, enterprise level, web-based application that provides a broad range of capabilities for inputting, processing, tracking, managing, and reporting on all types of cases. This web-based environment allows organizations to coordinate their work with other offices around the world 24/7.

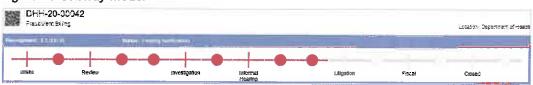
Cases seamlessly move through their case lifecycle by defining unique business processes and rules based on case type which determine when that case is ready for the next status. For example, programs have their own set of closure criteria that must be met for a case status to be marked as closed. As the case reaches a new status, the application can be configured to automatically generate a notification to all applicable stakeholders. Every screen within the application can be configured to display a status banner that displays configurable information that is pertinent to the client or case as seen in the following figure.





The Subway model shown below, found at the top of the case's record, gives the user a visual representation where in the process the case is currently.

Figure 19 Subway Model



Pl015 Suspensions



The Program Integrity Application can track who has been suspended and the length of the suspension. Authorized users will be able to search to see who has been suspended, when the suspension occurred, and the length of the suspension.

#### PI016 Terminations

The Program Integrity Application can track who has been terminated as the result of an investigation. This supports later investigations, as it can provide historical context if a terminated person is under investigation again.

### PI017 Criminal/civil convictions

An individual's criminal/civil convictions can be included in the individual's profile within the Application. Documents associated with the conviction(s) can also be uploaded and attached to the profile.

### Pl018 Recovered amounts from referrals of potential fraud, waste, and abuse

The Application can track the recovered amounts from referrals of potential fraud, waste, and abuse. These amounts, including how much has been recovered and how much still needs to be recovered, can be tracked within the Application.

## Pl019 Recovered amounts from improper payment

The Application can track the recovered amounts from identified improper payments. These amounts, including how much has been recovered and how much still needs to be recovered, can be tracked within the Application.

### Pl020 Recovered amounts from various third-party recoveries including, but not limited to:

The Application can track the recovered amounts from third parties. These amounts, including how much has been recovered and how much still needs to be recovered, can be tracked within the Application. This can be achieved automatically in certain cases; if the third-party recovery is handled through a system which has an interface point with the Application, the information can be transferred from that system into our Application. Without the interface point, the amount recovered will need to be entered manually by an authorized user, but the Application will be capable of adjusting the amount that still needs to be recovered.

#### PI021 Tort and casualty

Third-party handling of tort and casualty recoveries can be tracked in the Application. With an interface point between the Application and the designated third party, the application can track information about how much has been recovered and how much remains to be recovered.

### PI022 Restitution

Third-party handling of restitutions can be tracked in the Application. With an interface point between the Application and the designated third party, the application can track information about how much has been recovered and how much remains to be recovered.

#### PI023 Trust and trust recoveries

Third-party handling of trust and trust recoveries can be tracked in the Application. With an interface point between the Application and the designated third party, the application can track information about how much has been recovered and how much remains to be recovered.



The solution should include an Investigative Case Management component that manages recoveries including, but not limited to:

The Program Integrity Application supports managing and tracking the recoveries from the identification of overpayments, including all the categories of recovery identified by the RFP. The application can interface with the state's fiscal system to notify the fiscal system of an identified receivable and track and report on the progress of the recoveries by receiving information from the state's fiscal system.

PI025

Tracking payments received

The recovery record tracks what payments have been received, and when those payments were received. From there, the Application will update the amount that still needs to be recovered.

PI026

Payment plans

The Application can create and track Payment Plans. These plans track how much is to be collected from the recovery effort at each point, as well as the source of the recovery (e.g. provider, individual).

PI027

Offsets

Any offsets that apply to a recovery can be applied. These can be applied automatically (based upon pre-defined criteria) or added by an authorized internal user. Offsets can either be a flat amount or a percentage, based upon the type of the offset. The Application can code and track the offsets, allowing internal users to see what offset have been applied to, when they were applied, and by whom. Authorized users will have the ability to remove an offset, if necessary.

PI028

Claim/encounter adjustments

Authorized users will be able to adjust a recovery based upon applicable claims/encounters. Associated claims/encounters can be related to the recovery in the Application, allowing an internal user to see what claims/encounters have caused an adjustment.

PI029

Settlements

Authorized users will be able to adjust a recovery based upon applicable settlements.

Associated settled cases can be related to the recovery in the Application, allowing an internal user to see what cases have caused an adjustment.

P1030

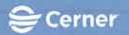
Restitutions

Authorized users will be able to adjust a recovery based upon court ordered restitutions. A copy of the court order can be attached to the recovery, keeping the documentation with the recovery. The Application can track how much is to be recovered, how much has been recovered, and how much is left to recover.

PI031

Multiple payments and checks

The Application tracks multiple payments/checks made in support of a recovery. Each payment is tracked separately, so that authorized users can see how much was paid, when it was paid, and by what method. The recovery will update with the new total after each payment, tracking how much is still owed.



Amounts remaining due

When recovery money arrives (from any source), the Application updates the recovery information to display the new amount(s) due.

PI033

Due dates

The Application can assign due dates to recoveries. These due dates can be assigned automatically (based upon pre-defined criteria) or assigned by an authorized user. Dates assignment may even be based upon a payment plan. Notification may be sent automatically to the appropriate individuals as a due date approaches.

PI034

Court case numbers and jurisdictions

After a court case, the Application records the court case number and the jurisdiction. This may be recorded in the case and/or the associated recovery.

P1035

Defendant names

After a court case, the Application records the defendants. The outcome can also record the outcome, even if it doesn't result in a recovery. This supports other investigations as it allows investigators to see when an individual has been previously investigated and gives these investigators the ability to review the associated court cases. If the court case goes to a recovery, the defendant names will also be associated with the recovery.

PI036

Recovery supplier payments

When a supplier makes a recovery payment, the Program Integrity Application tracks the payment. This information includes the amount paid, when the payment was made, and who made the payment.

PI037

Federal share calculations

The application calculates the correct Federal Fund Participation (FFP) of identified recoveries, based upon correctly allocating the date of service-specific Federal Medical Assistance Percentage (FMAP) for all claims associated with an overpayment over time.

PI038

**Bankruptcies** 

If a bankruptcy is declared during a recovery payment process, the Application will automatically take this into account and adjust the recovery record as appropriate. This includes closing out the recovery record with a balance still due, with a notation of bankruptcy. This notation differentiates the record from other closed recovery records.

PI039

Business status including out of business

The Program Integrity Application tracks the status of businesses associated with any recoveries. Certain business status, including out of business, may trigger other actions within the Application. For example, out of business may trigger the closure of the recovery or other steps to obtain the full recovery amount.

PI040

The solution should include an Investigative Case Management component that manages recoveries with the ability to link all claims associated with an investigation.



As investigations occur in the Program Integrity Application, the claims associated with an investigation can be linked to that investigation – or multiple investigations – by attaching those claims to a case in the form of either a .csv file or through a hyperlink to a report within the Application, as seen in the following figure.

Figure 20 Attachment to a Case



Once a claim is attached to a case, the list of claims associated to the case are also visible within the Case Management portion of the application, as seen in the following figure.

Figure 21 Open Cases



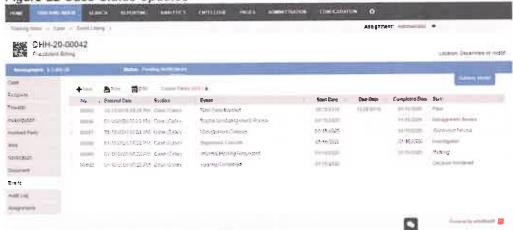
PI041

The solution should include an Investigative Case Management component that manages recoveries including the stage of review with respect to:

Cases seamlessly move through their case lifecycle by defining unique business processes and rules based on case type, which determine when that case is ready for the next status. For example, programs have their own set of closure criteria that must be met for a case status to be marked as closed. As the case reaches a new status, the application can be configured to automatically generate a notification to all applicable stakeholders. Every screen within the application can be configured to display a status banner that displays configurable information that is pertinent to the client or case.



Figure 22 Case Status Updates



Review stages can be included as part of a workflow, preventing the case from moving on to the next step without a response.

# PI042 Investigations

The Program Integrity Application tracks a case through the full investigation cycle. Investigators will be able to add notes to a case, tracking what has been discovered. The Application includes investigative steps, making sure that the investigation follows DHHR's process and the correct materials are gathered. The notes also reduce any downtime resulting from a case moving from one investigator to another, or if an investigator is reviewing an older case.

## PI043 Appeals

When a case goes through appeals, the Application tracks all the appeal information. The information from the original investigation, case, and all appeals are tracked in one location, providing a user with the full history of the case. Each appeal is tracked from initiation through the final decision. Each individual associated with the appeal can be tracked as well.

### PI044 Final dispositions

The final dispositions are recorded in the case history. Any associated court documents will be attached to the record. Depending on the final disposition, the case will move into its next stages. If it moves into recovery, a recovery record is created and associated with the case.

#### PI045 Referrals

The Application tracks all referrals. This information includes the referral source, when the referral was received, and what next steps need to be taken because of the referral.

#### PI046 Active status

Any authorized user may view the status of a case. The Application can treat a case differently depending on whether the case is considered active or not (e.g. who can see/access a case's information may be different depending on if the case is active or if it is archived).

PI047	Managed Care Organizations (MCOs)



The Program Integrity Application tracks what MCOs are associated with a case, appeal, and/or a recovery.

# Pl048 Responsible parties

The Application tracks all responsible parties associated with an investigation, court case, appeal, and recovery, even if these parties change during the investigation and/or recovery. The case file maintains a historical record of all responsible parties.

# Pl049 Linked investigation claims

The Application allows authorized users to link investigation claims. This creates a new case file, with two (or more) claims attached to the combined case file. This case file then moves through the case lifecycle as normal. If the case goes to recovery, then the case and its associated linked claims will be attached to that recovery.

# Pl050 Others as defined by the Department

During our discovery phase, we will work with the Department to determine what workflows are needed. The Application will be able to maintain and manage all these workflows/case types.

Pi051 The solution should include an Investigative Case Management component that has an audit trail on each record including, but not limited to:

Each case has an audit log that cannot be edited, tracking what changes have been made to the case, by whom, and when the change occurred. This log can be exported, allowing it to be included as a report on a case's activity.

Figure 23 Case Audit Log



#### PI052 Notes

The audit trail will contain notes about what has been changed. This included the addition, modification, or deletion of notes.

PI053 Capturing changes by authorized solution user identification



All changes made to the case will be captured in the audit log. This log tracks who made the change by username, though a system audit log can also track the IP address of changes. Should a user's activity appear suspicious, a system administer would be able to review these logs to look for any discrepancies.

PI054 Date and time of change

All changes made to the case are captured in the audit log. This data includes the date and time of the change.

PI055

The solution should have an Investigative Case Management component that supports multiple ongoing Department-specific reviews within a single case

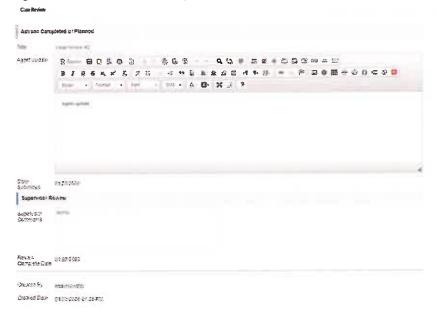
The application is capable of tracking, managing, and supporting multiple concurrent reviews of an individual provider, recipient, or cases by multiple entities internal or external to the department. These reviewers can review the same or different aspects of the case; their only limitations would be based upon their roles. The application's fully configurable role-based permissions limit what each user role can view to protect sensitive information. The workflow can be set-up to require all reviews to be complete before the case moves to the next stage. As seen in the following figure, a case can have more than one review active simultaneously.

Figure 24 Tracking Inbox



As seen in the following figure, this case review is configurable.

Figure 25 Case Review Configuration



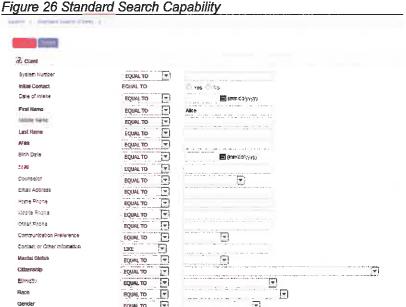


The solution should have an Investigative Case Management component that supports reporting on all case information including, but not limited to:

Reports can be run on all information in the system. These reports can be run by authorized users at any time or be set to run at other times (e.g. during off hours). The Application provides a set of pre-formatted reports that allow DHHR staff to provide senior staff and management with reports and statistical updates as necessary. In addition, Department-specific reports can be configured within the application to support DHHR needs.

The Application also offers a robust report generation and design capability which provides users with the ability to generate and format ad hoc reports. These ad hoc capabilities are done through a user-friendly interface and provides a variety of options for report output including Microsoft Word® documents, Microsoft Excel® spreadsheets, and PDF documents.

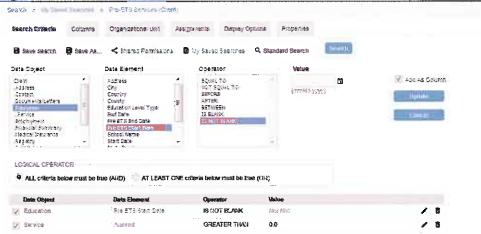
Users may also use the application's robust search features to build ad hoc reports. The standard search allows users to search on any field within the system that has been made searchable (controllable by the system administrator) using Boolean, like, between, greater/less then, equal search criteria. The results are returned in an easy to read, sortable format that is interactive on the screen.



The advanced search tool set is a more powerful and robust version of the standard search. In addition to the criteria supported with the standard search, it allows a combination of joins, custom view of the data returned, and allows other criteria similar to writing a SQL query. The advanced searches have the advantage with the ability for them to be saved and shared based on user's roles permissions. The "google-like" searches allow free-form entry of search terms and return results based on context and content and degree of similarity to the search terms entered.



Figure 27 Advanced Search Criteria



PI057 Overall case status

The Department will have the ability to run a report showing the status of all the cases in the Application. Users will also can search to see which cases are in a specific status at any time.

PI058 Department-specific audit status

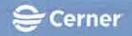
Each Department-specific audit can have its own status, independent of the overall status of the case. An authorized user will be able to run a report to display which audits are in which status. Users will also be able to search audits to view audits currently in a particular status.

Pl059 The solution should include an Investigative Case Management component that includes automatic and scheduled notification of case status changes, and other criteria as defined by the Department.

The Program Integrity Application provides both automatic and scheduled nonfictions of such events including case status changes or other Department-defined criteria. Automatic notifications can also be sent out to the appropriate users when a case is assigned/reassigned. For items which have deadlines attached, notifications can be sent to the appropriate personnel if a deadline is approaching or has been missed.

Figure 28 Creating a Notification

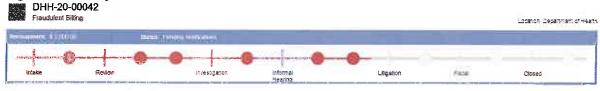




The solution should include an Investigative Case Management component that allows claims and encounter data to be flagged to indicate the current audit process stage including, but not limited to:

The application allows claims and encounter data to be flagged regarding the current audit process stage.





Pl061 Open

The Application can mark and track investigative cases in the "Open" status.

Pl062 Under review

The Application can mark and track investigative cases in the "Under Review" status. Reviewers can be assigned to the case to provide the necessary reviews.

Pl063 Finalized

The Application can mark and track investigative cases in the "Finalized" status.

PI064 Needs follow-up

The Application can mark and track investigative cases in the "Needs Follow-up" status. An authorized user will be assigned to perform the follow-up by a pre-determined deadline.

Pl065 Other statuses identified by the Department

The Application can mark and track investigative cases in any previously identified status. A system administrator will have the ability to add statuses if new ones become identified during the life of the Application.

Pl066 The solution should have the ability to produce comprehensive statistical profiles of providers by peer groups for all categories of service authorized under the Medicaid program.

The Program Integrity Application produces statistical profiles of providers by peer groups for all Medicaid categories of services: professional, institutional, dental and pharmacy. As seen in the following figure, this suite of Analysis Tools uses a machine learning algorithm to compare providers to each other within designated peer groups – for example, provider type or provider type/specialty. The features of the algorithm are a set of measurements by which all providers can be compared – such metrics include dollar and service volumes, average daily or monthly volumes and changes over time in commonly used services.

Providers can be statistically compared over any time frame and within user selected peer groupings. Once outlier providers are selected, users can drill in to see why a provider is an outlier to peers, broken down by individual metric.





The solution should have the ability to perform analyses and produce reports responsive to requests from the Department by means of computerized exception processing techniques.

The Program Integrity Application has the ability for analysis to be performed both manually by users and automatically by the Application, by way of scheduled or pre-defined reports, or alert notifications based on existing coded provider or member behaviors. These reports are interactive, meaning they can be easily modified or cloned for various analytic needs. They also have a functional end-state of either a .csv text file or a PDF document that can be transported by any appropriate means. Analysis requests from the Department can receive a rapid response from either Department or Vendor staff. Once an interactive report is created for the first time, it can be instantly accessed or even modified by the Department through the browser-based Portal.

PI068

The solution should have the ability to suppress processing on a member within specified categories on a run-to-run basis.

The Program Integrity Application can suppress processing – or analytic reporting – on any member. Suppressed members can be identified individually and excluded from processing via an internal Application construct called a List, or specific categories of members can be excluded via filtering on a temporary or permanent basis. Members can also be automatically excluded from processing based on any case management status.

PI069

The solution should provide access to all data elements outlined in the State Medicaid Manual (SMM) Part 11, section 11335, and all additional data required for appropriate analysis of the program.

The Program Integrity Application will provide access to all data elements outlined in the State Medicaid Manual (SMM) Part 11, section 11335, and all additional data required for appropriate analysis of the program.

PI070

The solution should have the ability to export claims-based class groupings such that data can be used within a spreadsheet or database software.

The Program Integrity Application can export claims-based results of any analysis in a .csv text file format that is natively supported by Microsoft Excel® and other spreadsheet or database



software. Every Analysis Tool has on *Export* option, so that the data being analyzed, just as it is being seen on the screen, can be exported to a .csv file. Additionally, many Analysis Tools also have a *Full Export* option, that exports all data seen on the screen, along with many other relevant data fields that might be analytically useful outside of the Application.

P1071

The solution should include a process to weight and rank exception report items to facilitate identification of the highest deviators.

The Program Integrity Application has a library of pre-defined "exception reports" – analytic reports that measure and track the potentially aberrant behavior of providers and identify the claims related to those behaviors. The number of these reports is continuously growing, created by Vendor staff as new billing schemes or policy-based restrictions are identified. These reports can also be created by Department staff, and then individually designated to contribute to the Provider Risk Score. The Provider Risk Score is a machine learning algorithm that takes these analytic reports into account to identify the providers (can also include member, prescribers or even MCOs) that are most deviant and therefore need to be addressed first by the Department. Providers are presented in a simple Red, Yellow, Green designation, and then users can drill into these categories to select specific investigative targets.

Pl072

The solution should have the ability to capture provider and member use of covered services and items including, but not limited to, prescribed drugs.

The Program Integrity Application has the ability – and was, in fact, designed through the use of Analysis Tools – to capture provider and/or member use of covered services, within any specified time frame and using any data-related filter criteria. This holds true for every claim category: professional, institutional, dental and pharmacy. These services can be summarized by dollars or service counts, and users can drill into any summarized metrics to the granular services beneath, all uniquely identified by claim ID and Line Number. The information captured in Analysis Tools regarding the use of covered services can be converted into a Report, made into an Alert, attached to a Case, or exported for use outside of the Application.

PI073

The solution should have the ability to classify members into peer groups to develop peer group statistical profiles using criteria including, but not limited to:

The Program Integrity Application supports classification of members into peer groups for analysis using almost any data field in enrollment or claims-based datasets. Once a set of members is isolated by filtering on a multitude of enrollment and claims elements, those members can be placed into a persistent List, which can then be used to include or exclude this peer group of members when performing additional analysis or when generating analytic exception reports.

PI074

Age

The Program Integrity Application calculates both the 'current age' and the 'age at time of service' for every member and for every claim for a member. Either of these fields can be used as filters when defining a member peer group for statistical or analytic examination.

PI075

Gender

The Program Integrity Application uses the enrollment-based gender field for every member, and this field can be used as a filter when defining a member peer group for statistical or analytic examination.



Race

The Program Integrity Application uses the enrollment-based race field for every member, and this field can be used as a filter when defining a member peer group for statistical or analytic examination.

PI077

Geographic region

The Program Integrity Application uses the enrollment-based location/address fields for every member. The Application also keeps an historical record of addresses for every member. Fields from this data – zip code, city, county, etc. – can be used as filters when defining a member peer group for statistical or analytic examination.

PI078

**Eligibility Category** 

The Program Integrity Application uses the enrollment-based Eligibility Category field for every member, and this field can be used as a filter when defining a member peer group for statistical or analytic examination.

PI079

Special programs code

The Program Integrity Application can use information concerning members' special programs when defining a member peer group for statistical or analytic examination.

PI080

Claims data elements

The Program Integrity Application can make use of nearly every element in claims data for defining a member peer group for statistical or analytic examination. For example, if a user wanted to create a member peer group of all members who have received a limb amputation service, this would be as simple as filtering by the procedure or diagnosis codes related to limb amputation, and then creating a unique peer group of the members who meet that criteria.

PI081

Other criteria defined by the Department

The Program Integrity Application has the ability to use almost any criteria defined by the Department for constructing a member peer group for statistical or analytic examination. The only prerequisite is that the requested criteria is available in a data source provided by the Department or that the Vendor can access the necessary data elsewhere.

PI082

The solution should have the ability to classify providers into peer groups to develop peer group statistical profiles for comparative analyses using criteria including, but not limited to:

The Program Integrity Application has the ability to produce statistical profiles of providers by peer groups for all Medicaid categories of services: professional, institutional, dental and pharmacy. This suite of Analysis Tools uses a machine learning algorithm to compare providers to each other—using a set of common metrics, or features—within designated peer groups. Peer groups can be defined using an almost limitless set of criteria. A persistent feature within the Application, called *Lists*, allows users to define a set of providers as a peer group, by making use of any data element available in the Application—from enrollment data, claims data, or even public data—and to then use that List of providers as a custom peer group in the statistical profiles suite of Analysis Tools. Once created, this List becomes a permanent construct of the Application and can be used for any analysis, Report or Alert.

P1083

Category of service



The Program Integrity Application has the ability to use the Category of Service field to determine provider peer groups for statistical comparison and profiling.

Pl084 Provider type

The Program Integrity Application has the ability to use the Provider Type field to determine provider peer groups for statistical comparison and profiling.

Pl085 Provider specialty

The Program Integrity Application has the ability to use the Provider Specialty field to determine provider peer groups for statistical comparison and profiling.

PI086 Type of practice

The Program Integrity Application has the ability to use the Provider Type of Practice field to determine provider peer groups for statistical comparison and profiling.

PI087 Enrollment status

The Program Integrity Application has the ability to use a provider's Enrollment Status to determine provider peer groups for statistical comparison and profiling.

Pl088 Facility type

The Program Integrity Application has the ability to use the Facility Type field to determine provider peer groups for statistical comparison and profiling.

Pl089 Geographic region

The Program Integrity Application has the ability to use a provider's Geographic Region (including zip code, city, county, etc.) to determine provider peer groups for statistical comparison and profiling.

Pl090 Place of service

The Program Integrity Application has the ability to use the Place of Service field to determine provider peer groups for statistical comparison and profiling. Since this information is usually designated at the claim or even service level, the Application can use a custom, calculated field like "Most Common Place of Service" when determining peer groupings.

Pl091 Billing versus rendering provider

The Program Integrity Application has the ability to determine provider peer groups for statistical comparison and profiling, based on whether a provider is a Billing versus a Rendering provider. The Application can also determine providers who are both, and use custom fields to, for example, calculate a provider's "Billed vs Rendered Dollar %" for use in selecting peer groupings.

Pl092 Number of beds

The Program Integrity Application has the ability to use the Number of Beds of an extended care or other facility to determine provider peer groups for statistical comparison and profiling.

Pl093 Claim data elements



The Program Integrity Application has the ability to use almost any field in claims data to determine provider peer groups for statistical comparison and profiling. For example, a user could select and create a provider peer group based solely on providers who have billed CPT code 99215, with a Place of Service of "12." This peer group could then immediately be used for statistical comparison and profiling.

## Pl094 Provider ownership

The Program Integrity Application has the ability to use Provider Ownership to determine provider peer groups for statistical comparison and profiling. Using the *Provider Affiliations* suite of tools, users determine providers, or groups of providers, who share common ownership. This information could be used to create peer groupings.

### Pl095 Referring provider

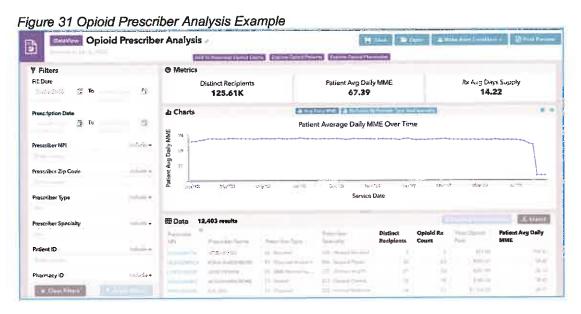
The Program Integrity Application has the ability to determine Referring provider peer groups for statistical comparison and profiling. These groups could be determined using claims-based information, or using information related to referral activity.

## PI096 Ordering provider

The Program Integrity Application has the ability to determine Ordering provider peer groups for statistical comparison and profiling. These groups could be determined using the providers claims activity, or using information related to ordering activity.

# Pl097 Prescribing provider

The Program Integrity Application has the ability to determine Prescribing provider peer groups for statistical comparison and profiling. These groups could be determined using standard pharmacy-claims-based criteria or by using utilization metrics related to dangerous or controlled drugs. For example, and as seen in the following figure, in the Application's opioid-specific toolsets, users could identify and create prescriber peer groups based on high Average Daily Morphine Milligrams Equivalent measures.





Pl098 Individual providers within group practices

The Program Integrity Application identifies and measures individual providers within group practices. This information can be used to determine peer groups for statistical comparison and profiling. These groups could be determined using claims-based information, or using information related to rendering activity within larger billing groups.

Pl099 Other criteria defined by the Department

The Program Integrity Application uses almost any criteria defined by the Department for constructing a provider peer group for statistical or analytic examination. The only prerequisite is that the requested criteria is available in a data source provided by the Department or that the Vendor can access the necessary data elsewhere.

PI100

The solution should have the ability to develop provider and member profiles sufficient to provide specific information as to the use of covered types of services and items including, but not limited to prescribed drugs.

A core feature of the Program Integrity Application is Profile Pages. Profile Pages can be thought of as the hub of the Application. Every "thing" within the data, from provider and members to locations and account numbers, has its own Profile Page. A Profile Page is a body of intelligence about that thing, containing attributes, statistics, metrics, charts, maps, and connections. Additionally, every metric and chart on a Profile Page can be clicked to drill down to the underlying information or data that created it. Thus, a member or *Recipient Profile Page* contains information such as: which providers have serviced that member, the volumes of those services and the types of services by procedure, DRG and/or diagnosis codes.

Where appropriate, Profile Pages will contain information about all types of services, including prescribed drugs. Since, in most states, the prescriber of a pharmacy claim is identified by that provider's NPI number, prescribed statistics and metrics would be found on a provider's NPI Profile Page. For members, information about medical, dental and pharmacy services can all be found on the Recipient Profile Page.

to a commonweal of the state of the second Ω MAI P HAKALA Risk Factors Opioid OD Event Count Rehab/Detox Days **ER Visit Count** Opioid 00278267911 1230 Risk of Overdose Risk of Opioid Use Disorder Top Prescribers by HOME GOFFISAN IPPHOSONIKA LESSA SHEPHY ROSEMAKIE # HENDY 6/4 DAWN F ZAHRIEN VALKENAOS \$11 Total Paid Opioid Drugs Average Daily MMF \$18,413 1,894.29 Top Filling Pharmacins by inted Locations (5) THE PART OF SHIP OF EACH PROPERTY.

Figure 32 Recipient Profile Page (Portion) With Drug Metrics Highlighted

PI101

The solution should have the ability to classify treatment to develop statistical profiles by diagnosis codes and/or diagnosis code ranges.



The Program Integrity Application classifies covered services by diagnosis codes and diagnosis code ranges. This is useful for stratifying or isolating a set of services that fall within a certain diagnostic range—be it medical treatment or the diagnoses attached to other services such as Durable Medical Equipment or Transportation. The Application allows users to isolate services with particular diagnosis codes using a simple and intuitive interface. Additionally, since diagnosis codes on a claim usually span five or more separate fields, users can establish criteria across all fields at once, or within a single Dx code "slot."

Throughout the Application, Analysis Tools contain filters that help users to set criteria for a diagnosis code or a range of diagnosis codes. Both ICD-9 and ICD-10 are supported within their appropriate time frames. As seen in the following figure, Application filters also support wildcards (ex. "J69\*" to represent all pneumonitis-related conditions), so services with ranges of diagnosis codes can be selected, and then those services can be used throughout the Application for general analysis, Reports or Alerts.

Claims Access: Institutional 

Min Service Date
Jan 1, 2016
Max Service Date
Jun 28, 2019

Primary Diag.

Type Of Bits

Plan Codo

Societa ID

B Data 46,263 results

Silling Provider
Marms

Type/Specialty

From Sorvice

Plan Code

PI102

The solution should have the ability to classify treatment to develop statistical profiles by procedure codes and/or procedure code ranges.

The Program Integrity Application classifies covered services by procedure codes and procedure code ranges. This is useful for stratifying or isolating a set of services – be it medical treatment or the CPT/HCPCS codes attached to other services such as Durable Medical Equipment or Transportation. The Application allows users to isolate services using a simple and intuitive interface. Throughout the Application, Analysis Tools contain filters that help users to set criteria for a procedure code or a range of procedure codes. Application filters also support wildcards (ex. "9921\*" to represent established patient office visits), so services with ranges of procedure codes can be selected, and then those services can be used throughout the Application for general analysis, Reports or Alerts.

PI103

The solution should have the ability to track readmissions for members readmitted to the same or different inpatient facility(ies).

One of the most powerful Analysis Tools in the Program Integrity Application is called *Event Analyzer*. Using this tool, users can create event-based scenarios, and then test those scenarios within the data, all without needing to know how to code or write queries. Event



Analyzer has a simple interface where users can create scenarios using relevant procedure codes, diagnosis codes, modifiers, and time frames. Once the user has created a scenario (ex. "show me instances where a member received a psychiatric evaluation and any other psychiatric services on the same day from the same provider") the Application can test the data and within seconds display results—instances—where the scenario occurred. Event Analyzer has the ability to track readmissions to inpatient facilities, and since results of the tool can be used to create Reports and Alerts, this behavior could be tracked over time, become part of an automated monthly exception report, feed into the Provider Risk Score, and even be used as an Alert to notify users when members have a readmission or exceed a threshold of readmissions.

PI104

The solution should have the ability to analyze rendering, ordering, referring, prescribing, and billing provider practices to report atypical utilization and/or billing patterns.

The Program Integrity Application was built to analyze utilization and billing patterns of providers. The Application contains hundreds of pre-defined analytic scenarios (i.e. Interactive Reports) that describe atypical utilization or behaviors performed by billing, rendering, ordering, referring and prescribing providers. These reports are automated and contribute to a Provider Risk Score. Additionally, the reports can be the basis of Alerts, which notify users when an atypical billing pattern occurs. One example of an Analysis Tool that centers on rendering providers is the *Impossible Day Tool*, as seen in the following figure. This tool sums up the time associated with services rendered by a provider and displays information regarding long, improbable, or even impossible (greater than 24 hours) days. With this tool, users can quickly see providers who are consistently claiming to render atypical volumes of services. Users can explore specific "long days" and even drill to the individual services that make up impossible days. The results of this Analysis Tool can be used to feed automated Reports or Alerts, as well as contribute to a Provider Risk Score.



PI105

The solution should have the ability to provide statistically valid random samples as defined by the Department and extract data for provider audits, member utilization analysis, and recoupment of funds.

The Program Integrity Application produces statistically valid random samples as defined by the Department through an integration with RAT-STATS, the no cost toolkit provided and maintained by HHS/OIG. Lists of providers, members, claims, or services that have been



generated in the Application can be directly inserted into RAT-STATS for statistical sampling. Sampled items can then be used directly in the Application for purposes of analysis, audit, investigation, or other review.

PI106

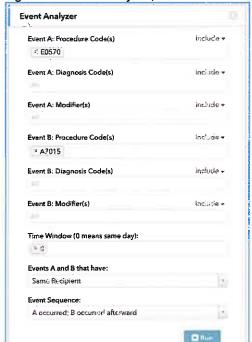
The solution should have the ability to support analytics of service and billing practices to detect utilization and billing problems including, but not limited to:

The Program Integrity Application provides analytical results related to the service and billing practices of providers, in order to identify, measure, and act on billing problems or aberrancies. The Application contains a suite of Analysis Tools that allow for the identification of a variety of known billing practices, and also provides non-technical users (Department and Vendor) with the ability to create newly discovered or suspected aberrant billing behaviors and test those behaviors against a universe of claims. The results of these analyses can be used to produce interactive or automated Reports that feed the Provider Risk Score and Alert notifications to users. These Reports are also interactive, in that users can modify or clone them at will to produce new results.

# PI107 Incidental procedures

Below is an example of how the Program Integrity Application can identify provider billing behaviors related to incidental procedures. The Event Analyzer Tool can be used to find Durable Medical Equipment (DME) providers who "tack on" incidental codes to billings. In this example, the user is looking for instances where a DME provider billed for a Nebulizer Kit (E0570), which includes a face mask and a replacement face mask (A7015) for the same member on the same day. The replacement face mask is unnecessary and is considered incidental to the Nebulizer Kit. This example billing behavior exists as a Report in the Application today, contributes to the Provider Risk Score and drives a user Alert.

Figure 35 Event Analyzer, nebulizer kit example (parameter entry interface only)





PI108 Mutually exclusive procedures and/or procedure codes

We provide two examples of how the Program Integrity Application can identify provider billing behaviors related to mutually exclusive procedures:

The Event Analyzer Tool can be used to find behavioral health clinicians who bill for psychiatric evaluations and psychiatric services for the same member on the same day, a behavior which is prohibited by policy. This example billing behavior exists as a Report in the Application today, contributes to the Provider Risk Score and drives a user Alert.

The Inpatient Overlap toolset allows users to easily identify outpatient services that are claimed to be rendered to members who are inpatient in a hospital or other facility at the time of the service, as seen in Figure 36. The tool automatically excludes the Admit and Discharge date from the analysis. Results derived from this toolset exist as Reports in the Application today, contribute to the Provider Risk Score and drive multiple user Alerts.

Inpatient Overlap Conflict Summaries / **T** Filters Distinct Conflicting Providers Conflict Service Count Tetal Conflicting Paid Amount 6.085 3.62M \$249,98% Facility Type include v & Charts Conflicting Paid Amount by Facility Type Conflict Provider #D induce. Conflict NPI Conflict Paid Amount Conflict Service Date 15 10,915 results Procedure Code 250 400 1 A DE NAME 885 1, 25% 22 43,457 Water to E.

Figure 36 Inpatient Overlap

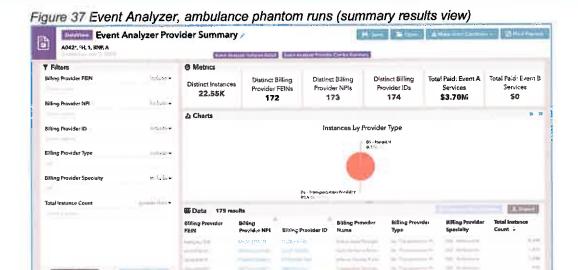
PI109

Mutually required procedures and/or procedure codes

Below is an example of how the Program Integrity Application can identify provider billing behaviors related to mutually required procedures:

The Event Analyzer Tool can be used to find "Phantom Ambulance Runs," a billing issue that involves claims for ambulance transportation when there is no accompanying medical service billed for the member on the date of the transport or the day after. An ambulance service can only be billed when the member is taken to a covered service, so therefore these services are mutually required. This example billing behavior exists as a Report in the Application today, contributes to the Provider Risk Score and drives a user Alert.





PI110 Unbundling of procedure codes

Below is an example of how the Program Integrity Application can identify provider billing behaviors related to unbundling of procedures:

A common example of unbundling occurs with laboratory providers and drug testing. In this example, the provider bills for a series of drug tests separately, when a bundled procedure code exists, in order to inappropriately boost reimbursement. Analysis Tools within the Application can easily root out this behavior. One method is by comparing laboratory providers to each other using the metric "average services per member per day." This metric, common in the Application, pinpoints providers who are billing for more average individual services than peers. This example billing behavior exists as a Report in the Application today, contributes to the Provider Risk Score and drives a user Alert.

PI111 Bill splitting

Below is an example of how the Program Integrity Application can identify provider billing behaviors related to bill splitting:

A common example of bill splitting occurs with pharmacy providers, who split prescriptions in order to maximize dispensing fee reimbursements. Analysis Tools within the Application can easily root out this behavior. One method is by comparing pharmacy providers to each other using the metric "average days' supply." This metric, common in the Application, pinpoints providers who are billing for shorter days' supply prescription lengths than peers for similar drugs, which can be indicative of prescription splitting. This example billing behavior exists as a Report in the Application today, contributes to the Provider Risk Score and drives a user Alert.

PI112 Other fields identified by the Department

Noted above are examples of how the Program Integrity Application can identify common provider billing schemes. These examples are only the tip of iceberg of what the Application can identify. New ideas for billing schemes can be easily created and tested against claims, by Department or Vendor users who do not need the technical skills to "code an algorithm" or even



write a query. Once new schemes are detected using the Application's Analysis Tools, those results can feed Reports, Alerts, and the Provider Risk Score.

PI113

The solution should have the ability to create random sample reports that include appropriate universe and sample totals to support analyses at varying levels of confidence.

The Program Integrity Application produces statistically valid random sample reports as defined by the Department through an integration with RAT-STATS, the no cost toolkit provided and maintained by HHS/OIG. Lists of providers, members, claims or services that have been generated in the Application can be directly inserted into RAT-STATS for statistical sampling. Sampled items can then be used as Reports in the Application for purposes of analysis, audit, investigation, or other review. These Reports contain sample totals and support the efficiency of showing results at varying levels of confidence.

PI114

The solution should maintain a date-driven parameter control file with online, real-time edit and update capability that allows the Department to specify criteria including, but not limited to:

The Program Integrity Application will maintain a date-driven parameter control file with online, real-time edit and update capability that allows the Department to specify criteria including, but not limited to:

PI115

Data extraction criteria

The Program Integrity Application has the ability to use data extraction information as criteria for filtering, analysis, and reporting.

PI116

Report content

The Program Integrity Application has the ability to use criteria and content contained within Reports for filtering, analysis, and reporting.

PI117

Date parameters

The Program Integrity Application has the ability to use date parameters as criteria for filtering, analysis, and reporting. Every Analysis Tool within the Application has Date Filters, based on all relevant date fields (service date, paid date, prescribed date, etc.). These filters can be set manually at the time of analysis or designated "universally" across the Application using a Master Date Filter.

PI118

**Exception parameters** 

The Program Integrity Application has the ability to use exception parameters as criteria for filtering, analysis, and reporting.

PI119

Others as defined by the Department

The Program Integrity Application will have the ability to use other criteria as defined by the Department for filtering, analysis, and reporting.

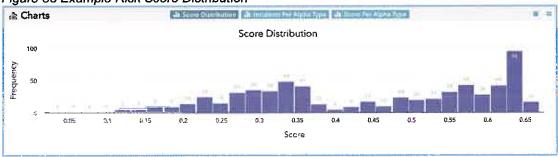
PI120

The solution should have the ability to generate frequency distributions and rankings for authorized solution user-selected report and statistical items.



The Program Integrity Application has the ability to generate frequency distributions and rankings for user-selected Analysis Tools, which in turn feed Reports. For example, users can see the score distribution and rankings associated with the Provider Risk Score.

Figure 38 Example Risk Score Distribution



PI121 The solution should include all claims data elements.

The Program Integrity Application accesses and stores all claims data elements, and it can analyze, display, report, and export data appropriate for analysis of the Program.

PI122 The solution should have the ability to flag a claim's most recent iteration.

The Program Integrity Application has the ability to track claim status across the entire payment process, from initial submission to final adjudication.

PI123 The solution should have the ability to review all iterations of claims in order to ensure claims are processed within Department policy guidelines, contractual requirements, and all applicable State and federal laws and requirements.

The Program Integrity Application has the ability to review all iterations of claims in order to ensure claims are processed within Department policy guidelines, contractual requirements, and all applicable State and federal laws and requirements. For example, the Application can review and analyze denied claims to look for providers who are "testing the system" in an attempt to maximize reimbursement.

Pl124 The solution should have the ability to review paid claims in order to:

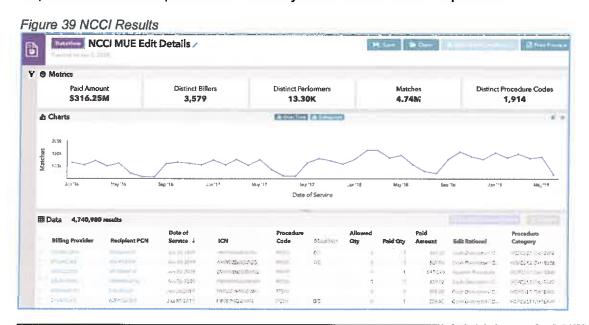
The Program Integrity Application has the ability to review paid claims for a multitude of purposes, including:

Pl125 Ensure claims are paid within Department policy guidelines, contractual requirements, and all applicable State and federal laws and requirements

The Program Integrity Application will ensure claims are paid within Department policy guidelines, contractual requirements, and all applicable State and federal laws and requirements. The Application currently accounts for all federal and universally accepted parameters when reviewing claims. As an example, the Application reviews claims on a monthly basis against all federal National Correct Coding Initiative (NCCI) edits. Results of this analysis feed Reports, Alerts and can contribute to the Provider Risk Score, if desired.



In addition, the Application will be configured by Vendor staff (clinicians, subject matter experts, and software engineers) to ensure all West Virginia policies, guidelines and contractual requirements are incorporated into all analytic and claims-review capabilities.



PI126 Ensure accuracy

The Program Integrity Application will ensure the accuracy of claims submissions and the payments made for those claims. Monthly exception Reports will be automatically generated and made available to Department users.

PI127 Identify excessive quantities and/or duplicate billing for the same procedure and/or procedure code ranges

The Program Integrity Application will identify excessive quantities and/or duplicate billing for the same procedures or ranges of procedure codes. A suite of Analysis Tools called *Provider Summaries* are able to identify providers being paid for excessive quantities of services, or for excessive units within single services. For example, these tools can identify instances where DME companies are paid in excess of 50 adult incontinence diapers for a single member during a week. These instances are flagged, can become part of a Report or Alert, and can contribute to the Provider Risk Score.

Additionally, duplicate services are easily identified using the *Event Analyzer* tool. For example, this Analysis Tool can identify instances where a member received the procedure 99205 more than once in same day from the same rendering provider. These instances are flagged, can become part of Report or Alert, and can contribute to the Provider Risk Score.

PI128 Identify excessive use of Healthcare Common Procedure Coding System (HCPCS) codes, surgical codes and/or procedure code ranges and other codes identified by the Department

The Program Integrity Application will identify excessive use of HCPCS codes, surgical codes/procedure codes or other codes identified by the Department. This can be accomplished through peer comparison (provider X uses a high-reimbursing surgical code ten times more than peers) or through set thresholds (provider Y exceeds 50 complex E&M billings per day).



One example of an Analysis Tool that helps users to easily find providers with excessive use of services is the *Impossible Day* tool. This tool uses minutes associated with timed services and adds them up per rendering provider, per day. Users can set daily thresholds to identify days where a provider claimed to work more than, for example, 24 hours. These instances are flagged, can become part of Report or Alert, and can contribute to the Provider Risk Score.

PI129

Identify claims paid above the quantity of claims, monetary, or other Department-specified limits.

The Program Integrity Application will identify claims paid above Department-specified limits, and those limits can be the number of services, claims, dollars, or units. These results are flagged, can become part of Report or Alert, and can contribute to the Provider Risk Score.

PI130

Other criteria defined by the Department

The Program Integrity Application will identify paid claims based on any criteria defined by the Department.

PI131

The Vendor should assist the Department staff in responding to any audit requests from federal and State agencies and external entities.

The Vendor will assist Department staff in responding to any audit requests from federal and State agencies and external entities.

PI132

The solution should have the ability to use historical data to support types of investigations including, but not limited to:

The Program Integrity Application has the ability to use historical data to support investigations. Users have the ability to leverage this data within any specified analysis time frame, and with every Analysis Tool or Interactive Report available in the Application. Additionally, users can take advantage of historical case management data on both providers and members in any analysis.

PI133

Provider utilization review

The Program Integrity Application can leverage historical data to perform and support provider utilization reviews. Claims data going back in time is always available in the Application and can be used instantly for any type of analysis. Users have complete control of the historical data to be utilized for any specific analytic project, through service date, paid date, and other claims-based filters.

PI134

Provider compliance review

The Program Integrity Application can leverage historical data to perform and support provider compliance reviews. Claims data going back in time is always available in the Application and can be used instantly for any type of analysis. Users have complete control of the historical data to be utilized for any specific analytic project, through service date, paid date, and other claims-based filters.

PI135

Member compliance review

The Program Integrity Application can leverage historical data to perform and support member compliance reviews. Claims data going back in time is always available in the Application and can be used instantly for any type of analysis. Users have complete control of the historical data



to be utilized for any specific analytic project, through service date, paid date, and other claimsbased filters.

# PI136 Member utilization review

The Program Integrity Application can leverage historical data to perform and support member utilization reviews. Claims data going back in time is always available in the Application and can be used instantly for any type of analysis. Users have complete control of the historical data to be utilized for any specific analytic project, through service date, paid date, and other claims-based filters.

## PI137 Drug utilization review

The Program Integrity Application can leverage historical data to perform and support drug utilization review of pharmacies, members, or prescribers. In fact, the Application is being used today for a state's Medicaid program specifically to perform drug utilization review (DUR) activities. Claims data going back in time is always available in the Application and can be used instantly for any type of analysis. Users have complete control of the historical data to be utilized for any specific analytic project, through service date, paid date, and other claims-based filters.

# Pl138 Other as defined by the Department

The Program Integrity Application can leverage historical data to perform and support many other types of investigation as defined by the Department.

PI139 The solution should have the ability to interface with all Department-specified claims processing systems.

The Program Integrity Application has the ability to interface with all Department-specified claims processing systems.

Pl140 The solution should have the ability to conduct surveillance and utilization review (SUR) across all Medicaid services and Social Services payments regardless of the service delivery method or financing mechanism.

The Program Integrity Application has the ability to conduct surveillance and utilization review (SUR) activities and analysis across all Medicaid services (institutional, professional, dental, and pharmacy) and Social Services payments regardless of the service delivery method or financing mechanism. These activities include but are not limited to provider peer comparison reporting, outlier identification, utilization reporting, and exception reporting.

Pl141 The solution should have the ability to link all services to a single member regardless of the number of historical changes in the member identification (ID) number.

The Program Integrity Application uses a construct called a Universally Unique Identifier for members and other entities within the data. This identifier ensures that a member's true identity is being tracked and analyzed, even if that individual has had multiple member ID numbers.

The solution should have the ability to maintain appropriate controls and audit trails to ensure that the most current surveillance and utilization review (SUR) data are used in all processes relying on the SUR data repository.



The Program Integrity Application will have the ability to maintain appropriate controls and audit trails to ensure that the most current surveillance and utilization review (SUR) data are used in all processes relying on the SUR data repository.

PI143

The solution should have surveillance and utilization review (SUR) functions to produce management summary reports and to edit control files for inactive service codes including, but not limited to:

The Program Integrity Application has surveillance and utilization review functions to produce summary reports and control files related to utilization for inactive service codes.

PI144

Procedure codes

The Program Integrity Application can monitor utilization historically and on an ongoing basis for claims for procedure codes that are deemed inactive per the Department and produce summary and detailed reports of that utilization. Additionally, the Application can report on procedure codes that are no longer being used or billed by providers.

#### PI145

Revenue codes

The Program Integrity Application can monitor utilization historically and on an ongoing basis for claims for revenue codes that are deemed inactive per the Department and produce summary and detailed reports of that utilization. Additionally, the Application can report on revenue codes that are no longer being used or billed by facility providers.

PI146

The solution should have the ability to track federally assisted program participants separately from other categories of assistance.

The Program Integrity Application will have the ability to track federally assisted participants separately from other categories of assistance. Since these categories of assistance are merely data elements derived from State and/or Federal enrollment records, these elements can be used throughout the Application as filters to analysis and reporting.

PI147

The solution should have the ability to identify members who exceed program norms, ranked by severity.

The Program Integrity Application includes the ability to identify members who are outliers as compared to other members and to rank these members by severity. The analysis uses a machine learning algorithm called K Nearest Neighbors (KNN), which can score members across a variety of measures related to Medicaid services utilization. Those "furthest" from program norms will have higher scores and rankings.

PI148

The solution should have the ability to identify services received by members who are enrolled in selected programs.

The Program Integrity Application will have the ability to identify services received by members who are enrolled in selected programs. Since program memberships are merely data elements derived from State and/or Federal enrollment records, these elements can be used throughout the Application as filters to analysis and reporting. Identified services can be surfaced as Reports or Alerts.

PI149

The solution should have the ability to identify services received by members who have specified diagnoses.



The Program Integrity Application has the ability to classify covered services by diagnosis codes and diagnosis code ranges. This is useful for stratifying or isolating a set of services that fall within a certain diagnostic range – be it medical treatment or the diagnoses attached to other services such as Durable Medical Equipment or Transportation. The Application allows users to isolate services with particular diagnosis codes using a simple and intuitive interface. Additionally, since diagnosis codes on a claim usually span five or more separate fields, users can establish criteria across all fields at once, or within a single Dx code "slot."

Throughout the Application, Analysis Tools contain filters that help users to set criteria for a diagnosis code or a range of diagnosis codes. Both ICD-9 and ICD-10 are supported within their appropriate time frames. Application filters also support wildcards, so services with ranges of diagnosis codes can be selected, and then those services can be used throughout the Application for general analysis, Reports or Alerts.

PI150

The solution should have the ability to profile all services provided to a member during a single episode of care.

The Program Integrity Application has the ability to group services into episodes. For example, a member breaks her right leg, goes to the emergency department, is admitted into the hospital, has surgery, is prescribed medication for pain, and has several follow-up physician visits – all over the course of one year. The Application can group all of these individual services into an episode of care with a unique identifier. From there forward, these services will be tied to that episode and can be easily identified or analyzed. Additionally, through direct interface with the Cerner HealtheIntent platform, the Program Integrity Application can make analytic use all episode groupings identified there.

One example of episode grouping in the Application is opioid overdose. As part of the Application's suite of opioid-centric tools, overdoses (related to both prescription or illicit drugs) are identified and grouped with all services related to that overdose: opioid prescriptions, naloxone administration, emergency transport, hospital services, etc.

PI151

The solution should have the ability to generate reports of individual members by peer group.

The Program Integrity Application generates reports of individual members by peer group. Some common criteria used for member peer grouping include location (zip code, county, etc.), enrollment status, waiver program enrollment, age, and sex. Once these peer groups are established, they can be used throughout the Application for analysis on a group or individual member basis.

PI152

The solution should have the ability to select claims and encounter data dating back to whatever time period is appropriate for the specific research.

The Program Integrity Application uses historical data to support review, analysis, investigations, and simple claim selection. This includes both fee-for-service (FFS) claims and encounter data from MCOs. Throughout the Application, FFS and encounter claims can be selected separately or combined through the use of filters. Users have the ability to leverage this data within any specified analysis time frame, and with every Analysis Tool or Interactive Report available in the Application.

PI153

The solution should have the ability to produce claim and encounter detail and special reports by provider type and member classification including, but not limited to:



The Program Integrity Application has the ability to produce claim and encounter detail and special reports by provider type and member classification. These reports can be further specialized using a multitude of data elements from claims, encounter, enrollment, and case management data sources.

#### PI154

Category of service

The Program Integrity Application has the ability to produce claim and encounter detail and special reports by provider type and member classification, including the Category of Service field within claims/encounter data sources.

#### PI155

Group practice

The Program Integrity Application has the ability to produce claim and encounter detail and special reports by provider type and member classification, including Group Practice information included in enrollment data.

#### PI156

Case

The Program Integrity Application has the ability to produce claim and encounter detail and special reports by provider type and member classification, including all Case information for providers and member contained within the Case Management Application.

# PI157

The solution should have the ability to provide and store all utilization reports in the medium designated by the Department.

The Program Integrity Application will have the ability to provide and store all utilization reports in the medium designated by the Department. Currently, the Application can provide and store Reports in three different mediums:

PDF—The Application provides and store all Reports, Profile Pages, and other analysis results in PDF format.

Excel/CSV—The Application exports all reports and results to a .csv text file that can be natively opened in Microsoft Excel®, as well as used in other database/visualization software.

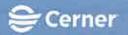
Interactive Reports—The Application saves every analysis into an internal Interactive Report. These Reports exist in a library within the Application and can be shared with other users. They can be cloned or adjusted by multiple users and can be exported to .csv or saved to PDF when desired.

Additionally, .csv exports and PDF reports can be attached to a Case and permanently "carried" with an investigation or review.

# PI158

The solution should have the ability to provide standard Department and Centers for Medicare & Medicaid Services (CMS) program integrity reports in accordance with Department reporting standards.

The Program Integrity Application provides a set of pre-formatted reports that allow DHHR personnel to provide senior staff and management with reports and statistical updates as necessary. In addition, Department-specific reports can be configured within the application to support DHHR needs. Reports can be specifically configured to address any Federal mandatory reporting (e.g. CMS periodic reports).



PI159

The solution should have the ability to provide the flexibility to vary time periods for reporting purposes and produce reports on a daily, monthly, quarterly, or other frequency as specified by the Department.

The Program Integrity Application has the ability to analyze and report information based on any time period within the available data. Every Analysis Tool within the Application has Date Filters, based on all relevant date fields (service date, paid date, prescribed date, etc.). These filters can be set manually at the time of analysis or designated "universally" across the Application using a Master Date Filter. Information derived from an analysis produce Reports that can be delivered on any time schedule desired by the Department—daily, monthly, quarterly, etc.—and will show up as either notifications within the Application or via email.

P1160

The solution should have the ability to display all relevant data by National Provider Identifier (NPI) or by a subset of the provider's practice.

The Program Integrity Application displays all relevant data and analytic results for providers by multiple identifier levels—Medicaid Provider ID (both rendering or billing), National Provider Identifier (NPI), or Federal Tax ID.

PI161

The solution should have the ability to develop and implement technical and authorized solution user training programs.

Training plans for the Program Integrity Application will be developed and implemented prior to User Acceptance Testing of the Application. The Department can expect initial in-person and onsite training with all users, along with as-needed, in-person training as new features and/or users are added. Additionally, remote webinars will be performed on a regular basis—at least quarterly—to refamiliarize users with common features and functionalities. These webinars will be performed live, and video recordings of them will be made available to the Department for additional reference.

PI162

The solution should have the ability to automatically identify exceptions to norms of utilization or quality of care standards established by the Department for any type of member covered by the Department plan.

The Program Integrity Application has the ability to automatically identify exceptions to norms of utilization related to quality of care standards. In other words, Reports and Alerts exist and can be modeled to inform users of situations where members are receiving too little services, or too many. For example, members who are receiving services under Managed Care and who have not received a single Evaluation & Management service in over a year can be flagged for further inspection. Conversely, a member who receives multiple spinal injections on the same day over an extended period can be flagged for further review.

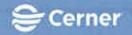
PI163

The solution should have the ability to automatically identify deficiencies and generate reports on levels of care and quality of care by provider type.

The Program Integrity Application has the ability to automatically identify deficiencies related to level or quality of care and generate both Reports and/or Alerts. These Reports/Alerts can stratify involved providers by type, specialty, or any other criteria found in claims or enrollment data.

PI164

The solution should have the ability to support pattern recognition and provide an automated fraud and abuse profiling system, that includes pre-built algorithms for the ongoing monitoring



of provider and member claims to detect patterns of potential fraud, waste, and abuse, including excessive billing.

The Program Integrity Application provides an automated fraud and abuse detection and profiling system. This system is based on a library of identified behaviors that were vendor-built using the Analysis Tools in the Application. The quantity of these analytic algorithms will always grow over time, consistent with Department, state and federal policies, guidelines, and laws. Also, users of the system—Vendor or Department—can create their own algorithms with ease and add them to the library. The results of each analysis (i.e. algorithm) drives Reports and Alerts and contributes to an overall Provider Risk Score that is constantly updated as new data enters the system. A few examples of the behaviors identified by these pre-built analytics are:

- Impossible Days impossibly long workdays by rendering providers
- Inpatient Overlap outpatient services billed while the member is inpatient in a facility
- Large quantities or percentages of members "shared" across providers
- Multiple dental extractions performed on the same tooth
- Dental restorations performed on previously extracted teeth
- Misuse of "new patient" E&M procedures for established patients
- "Phantom Transports" transportation services for members with no other covered services
- Upcoding ex. emergency ambulance services to non-emergency providers
- Unbundling ex. individual billing of drug screen tests that have a combined billing code
- "Phantom Prescriptions" prescriptions for controlled substances where there were no prescriber services on the date the prescription was written
- Inappropriate prescribing or filling of opioids
- Emergency room and hospital admission for the same member on the same day
- Providing services without a license or during a suspension

Additionally, all of the pre-built fraud, waste and abuse analytics can be looked at from the member perspective, in order to identify members who may be involved in fraudulent schemes, or whose member IDs may have been compromised.

PI165

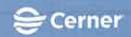
The solution should have the ability to automatically report on details of the practice of providers identified as exceptions or outliers.

The Program Integrity Application has the ability to automatically report on details of the practice of providers identified as exceptions or outliers. All analysis performed can be saved within the Application as an Interactive Report—this includes analyses that identify billing exceptions or provider that are outliers compared to peers. Details of the utilization of these providers can easily by designated to produce automatic reports that could delivered to users at any desired time interval.

PI166

The solution should have the ability to identify misutilization of services by individual members and promote corrective actions.

The Program Integrity Application has the ability to identify misutilization of services by members. An example of this is related to opioid utilization. The Application can analyze and report on how members are using prescription opioids, relative to standardized potency guidelines, general utilization parameters or thresholds — and in even relation to the members medical history or history of overdose. Based on the detail of the analysis, appropriate corrective actions can be derived, from education to investigation.



PI167

The solution should have the ability to automatically identify exceptions to norms of practice established by the Department for any type of provider covered by the Department plan.

As part of the initial implementation and the ongoing maintenance of the Program Integrity Application, Vendor staff will work with the Department to understand all practice norms established by the Department for any type of provider covered by the plan. The Application will then be configured to identify exceptions to those norms and to report those exceptions to the Department. As norms change or are added, the Application will be adjusted to maintain current rules and thresholds.

PI168

The solution should have the ability to apply clinically approved guidelines against episodes of care to identify instances of treatment inconsistent with guidelines.

The Program Integrity Application applies clinically approved guidelines against episodes of care to identify instances of treatment inconsistent with clinical guidelines.

PI169

The solution should have the ability to generate early warning reports of high-cost services and service misutifization based on current payment data to quickly identify high-volume practices.

The Program Integrity Application generates early warning reports of high-cost services and service misutilization based on current payment data to quickly identify high-volume practices. Using the Application's Alert capability, users are notified when providers meet or exceed the above criteria. These Alerts are generated every time data is updated in the Application.

PI170

The solution should have the ability to support provider performance reviews to determine the adequacy and extent of participation and service delivery.

The Program Integrity Application supports provider performance reviews to determine the adequacy and extent of participation and service delivery. One example of this is Provider Profile Pages, which are instantly accessible in the Application. They give users a comprehensive snapshot of a provider's participation and service delivery behaviors, within any time frame specified by the user. Additionally, any metric on a Profile Page can be drilled into to learn more information about a measurement or behavior.

PI171

The solution should have the ability to review provider participation and analyze provider service capacity in terms of member access to health care.

The Program Integrity Application has the ability to analyze services rendered by providers in relationship to the geographic location of serviced members. For example, the Application can show information about the members currently living in a particular rural area, and then compare that to the volume, participation, and capacity of providers in that area.

PI172

The solution should have the ability to support report balancing and verification procedures.

The Program Integrity Application supports report balancing and verification procedures.

#### **ASSUMPTIONS**

Cerner has a library of 1,000+ data source input templates and has the flexibility to build new data source templates for common industry standards and proprietary delimited flat files. The services for both have been included in this contract. Additionally, i2i supports five sources that utilize nonstandard or rarely utilized standards that can be custom configured and will require a contract extension.



- For the collection and analyses of data identified in this section, we assume that the state of West Virginia allows vendors to access the necessary data to perform the analytics described.
- As part of our implementation strategy, we will conduct strategy sessions, recommend best
  practices based on our experience, and work with you to refine the approach based upon
  your feedback.
- Our understanding of the requirements in this section is to provide oversight to adequately manage your member population and MCOs. This includes the ability to understand MCO performance and analyze the data under those groups.
- We will entertain discussions about any connections that DHHR would like to explore.
   Cerner will work with DHHR, and through design sessions, we will review your needs, and find out what questions the Department is trying to answer. Cerner will then work to design the reports that support those business needs.
- When receiving data from source systems, we are consuming a flat file from other software applications and not directly exporting from those systems; we will not directly connect with any external application.
- For the collection and analyses of data identified in this section, we assume DHHR can send the data in an ingestible format.
- For the collection and analyses of data identified in this section, Cerner and DHHR will work together to align the appropriate scope and staffing needed.
- For the collection and analyses of data identified in this section, we assume that the state of West Virginia allows vendors to access the necessary data to perform the analytics described, such as Prescription Drug Monitoring Program (PDMP) data and other examples that may be applicable.
- As part of our implementation strategy, we will conduct strategy sessions, recommend best practices based on our experience, and work with you to refine the approach based upon your feedback.
- Our understanding of the requirements in this section is to provide oversight to adequately
  manage your member population and MCOs. This includes the ability to understand MCO
  performance and analyze the data under those groups. Access to this data helps you drive
  care management and other innovation so that populations and members can receive the
  best outcomes in a cost-effective and timely manner.
- Public portal We did not see requirements requiring a public portal and have not included this capability in our pricing. Our solution and technical responses were based on the requirements listed in Pl001-Pl172 and are subject to confirmation upon contract award. We reserve the right to review and confirm our responses with the Department during negotiations. Should the Department determine that a public portal is desired, we can offer the eFile (Public Portal) application. eFile gives external (public) users access to selected aspects of the Program Integrity application. With eFile, organizations can accelerate and improve information capture, better engage external audiences, and lower the workload of internal staff. EFile has been used to enable external users to submit appeals/grievances online. It is important to note that these users (efilers) DO NOT count towards your concurrent user license. We have included eFile as on option in our Cost Proposal.



# **ATTACHMENT H: TECHNICAL SPECIFICATIONS APPROACH**

Instructions: Technical specifications include those that drive how systems should be designed and built in a way that provides for long-term use and reuse, in compliance with related standards (e.g., service-oriented architecture, State adopted standards, MITA, and the CMS Standards and Conditions), as well as defining the minimum set of technical capabilities expected from certain infrastructure components.

The Vendor should provide a narrative overview of how the proposed system will meet the specifications and narrative in this RFP. Use the response sections to provide specific details of the proposed approach to meeting the technical specifications in each subject matter area.

Responses in this section should be highly focused on the State business processes and specifications. If the Vendor is proposing a phased implementation, it should indicate how that approach may or may not impact functionality. Additionally, the Vendor should indicate exception handling processes where appropriate and any dependencies on existing systems or components of the new system to provide the specified functionality. Please include one or more diagrams where necessary that detail the proposed design and the relationships between key technical components.

# PROPOSED SOLUTION TO TECHNICAL SPECIFICATIONS

To support the technical requirements of this project, Cerner proposes the HealtheIntent Platform which supports a SaaS software delivery model in which software is managed and licensed by Cerner on a pay-for-use basis, centrally hosted, on-demand, and common to all clients. Cerner provides the technology infrastructure, core network, servers, storage, and resources to support the entire Platform. This includes everything from the costs and procurement of sub-licensed software, hardware, storage, and internal networking to the ongoing responsibility of ensuring all components continue to meet the infrastructure requirements Cerner's clients require. Our solution also provides a suite of coordinated technologies pre-loaded with both standard content and robust, flexible functionality that allows for configuration and ongoing innovation. We have designed and developed a solution that will support the needs of DHHR throughout the life of our strategic service-oriented partnership. Our rich 40-year experience as a leading healthcare IT vendor is reflected in our architecture, algorithms, analytics, and services.

We have a proven track record of ingesting and integrating both traditional healthcare data (e.g., clinical and claims sources) and *rich non-traditional data* (e.g., pollution, housing, and criminal justice sources). Not only do we have experience storing disparate data sources, but we have delivered actionable insights derived from these data sources through our catalog of reports and algorithms. Our knowledgeable staff of experts will deliver the technology, content, and services to meet DHHR's technical specification goals and focus to support better care, better health, and lower costs for West Virginians.

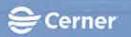
#### Our Technology

At the core of Cerner's solution is the HealtheIntent Platform which has led the industry for population health management and has delivered significant value to our MMIS clients with



rapid implementation timelines. The HealtheIntent Platform provides DHHR with technology designed to overcome the inherent challenges of combining disparate and non-traditional data sources. We will help to establish data-driven insights to inform business problems, strategy, and processes. To support the technical specifications of the EDS project, we describe the applications and tools of the HealtheIntent Platform.

applications & Tools	Capabilities
HealtheED <b>W</b>	Cerner's enterprise data warehouse (HealtheEDW) integrates and leverages data from each member's longitudinal record. Enterprise Data Warehouse enables population and enterprise-wide insight through structured analytic experiences, MCO oversight and accountability, and ad-hoc reporting capabilities. Data continuously flows through HealtheIntent and updates outcomes and performance. HealtheEDW provides predefined reports and data discovery experiences built around Medicaid use cases.
HealtheAnalytics	Cerner's analytics application displays all relevant metrics face-up. Users can identify trends and better determine their root cause by manipulating metrics as appropriate. HealtheAnalytics is powered by data ingestion, standardization, and calculation capabilities of the HealtheIntent Platform. DHHR can derive insights from available data and devise plans of action to attain sustainable outcomes.
HealtheDataLab	HealtheDataLab draws normalized data from DHHR's HealtheIntent Platform to support research, data science, and health intelligence initiatives. On-demand cloud computing platforms enable localized and enterprise-wide analysis for all modeling needs at scale. HealtheDataLab empowers DHHR to leverage investments in your customized statistical environment, providing flexibility in tool selection depending upon user preference.
HealtheRecord	Our Longitudinal Record provides DHHR users and stakeholders an organized, logical view of aggregated data for each member. It enables West Virginia to consume the most recent member data in a single screen and allows for quick searches of vast quantities of information. This functionality is invaluable in gathering insight into complex populations (e.g., former foster children) and for high utilizers to gather additional information.
HealtheRegistries	HealtheRegistries enables clients to identify gaps in care and attribute, measure, and monitor people at an individual, provider, or population level. Users can target individuals or population to reveal, for example, high-volume service utilization, opportunities for improved quality of care, and at-risk members. DHHR can apply this information to develop and implement targeted interventions and program change.
Cerner's Master Person Matching	Cerner's Master Person Matching is the internal Enterprise Master Patient Index (EMPI) for our platform. It features algorithms to match incoming data to existing member records using 12 demographic properties. Our tool use probability matching algorithms to identifying if data is related to an existing member record and uses all available data to determine relatedness between records. The system assigns a similarity score for each match. The system will link the member record with the data that meets configurable matching thresholds and does not require human validation.
Program Integrity	The Program Integrity application provides a broad spectrum of program integrity analytics tools and case management applications covering program integrity requirements, including analytics, reporting, and investigative workflow management (case intake, decision to investigate, referral to another authority, appeals, recovery, and closure). The application's continuous configurability allows for adaptation in response to ever-changing agency, regulatory, and statutory business requirements.
ì2iLinks	A standards-based proprietary interface technology that offers predictable and consistent results and supports a growing number of communication protocols such as HL7 over TCP/IP and Web Services. This powerful, full-featured integration layer connects disparate systems of clinical data, laboratory systems, financial reporting systems, payer and claims systems, Enterprise Data Warehouses (EDW), Health Information Exchanges (HIE) and more. Over 60 interfaces are part of the i2iLinks library, making it one of the most comprehensive interface systems available today. i2iLinks also provides operational support to the system in regard to code updates, logging and status reporting.



	accountability, and improvements against the policy
SAP BusinessObjects	SAP Business Objects is a third-party tool that provides a visual drag-and-drop interface to support robust custom reporting. It allows users to create queries on the fly; introduce formulas and new variables to existing objects; and aggregate, filter, and group by desired elements.
Tableau	Tableau is a third-party tool that supports data discovery and interactive visualizations such as trend lines, histograms and tree maps. This tool allows users to interact with data (10M+ row data sets) rather than viewing a static report.
SQL	SQL is used for the retrieval and extraction of information from a database by enabling users to create their own data sets from existing data, create their own data models, and write their own queries. The SQL Query writer supports query development at a simple, complex, advanced, and sophisticated analytic reporting level that helps end users view and understand their data.
Project Portal	The Project Portal serves as project management website and a hub of communications for the West Virginia EDS project. It is a comprehensive document repository, allowing for maintenance, versioning, and search capabilities throughout the life of the project. It houses the management plans, status reports, risk and issue log, agendas, minutes, project deliverables, and other project documentation available to all designated MMIS project stakeholders
eService	eService is an online trouble-ticket system that allows user to log and track Service Requests from any approved device and at any time. We offer support services through various access points including eService, and Cerner Support, and self-help.
Data Quality Monitoring	Cerner's data quality monitoring ensures that data received at both initial load and on a day-to-day basis is reliably monitored. The HealtheIntent Platform runs several algorithms and checks to ensure data volume, quality, and integrity of all incoming data
Data Set Designer	Data Set Designer is used to define new tables based on user-defined processing rules and parameters. Data Set Designer supports a wide range of use cases including multistep transformations that may aggregate, filter, partition, reformat, execute logical rules and perform complex calculations. Client frequently use Data Set Designer to protype new logic that is aligned with specific use cases.

The HealtheIntent Platform contains a proprietary data ingestion process that allows for the onboarding and mapping of disparate data to a common data model or structure. We leverage a state-of-the-art master person matching process to identify individuals across multiple data sources. Captured data then undergoes structural processing for alignment and mapping to industry standard terminologies.

The HealtheIntent Platform transforms and compiles this data into a single record (while retaining the accuracy of the source information). We then normalize data support accurate decision support, business intelligence, analytics, reporting, and research. Normalization, standardization, and clinical classification dramatically reduces the time needed for business analysts, data analysts, statisticians, data scientists, and researchers to glean insights from large volumes of data.

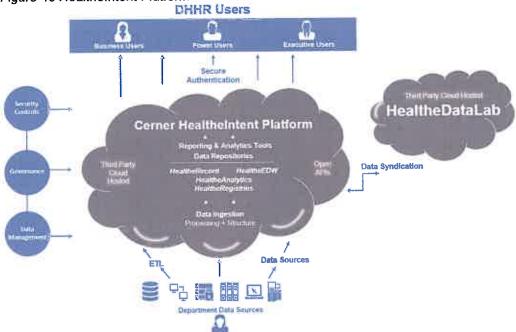
Following standardization, person matching, normalization, and the application of other "out of the box" algorithms and intelligence, data is then housed in the Platform itself. Here, end users leverage industry-leading tools, including Tableau and BusinessObjects for data visualization and reporting, SQL for ad hoc questions and creating and customizing reports, and open source data science tools for developing predictive and complex statistical models. This big data platform helps DHHR and other agencies to better design programs, understand state needs, and target interventions to maximize the impact of finite funds. With Cerner, West Virginia will gain a forward-thinking solution that exceeds the requirements of today and one that is uniquely positioned to evolve with DHHR over time. For all hosting, security, and access considerations, the HealtheIntent Platform provides a SaaS solution that is enabled through a secure public cloud infrastructure. Our hosting plan addresses areas that promote the successful



implementation and operation of the HealtheIntent Platform within a SaaS cloud environment, as opposed to a traditional brick and mortar data center.

The cloud infrastructure eliminates the need for large upfront investments in physical hardware, servers and storage devices, and hardware management. Instead, we provide the ideal computing resources needed for the Healthelntent Platform, as shown in the following figure, to support DHHR as your data needs and requirements expand.

Figure 40 HealtheIntent Platform

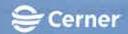


The HealtheIntent Platform's infrastructure is deployed across Availability Zones hosted by our strategic partner, Amazon Web Services<sup>SM</sup> (AWS). This approach enables us to provide DHHR with the resiliency benefits native to the Platform. Our system's data stores are designed to support multidimensionality and complex queries. Security features include role-based access to workflow and data including runtime row-based calculations (e.g. limit access to only members currently affiliated to the clinic this user is associated to), maintainability, and usability.

To maintain the security of our clients' systems and data we use a variety of tools and procedures. We maintain a documented information privacy, security and risk management program with clearly defined roles, responsibilities, policies, and procedures which are designed to secure the information maintained on our Platforms. We tightly control security policies and procedures and do not distribute written or electronic copies, which also helps maintain the appropriate security posture for protecting all clients' data. We also regularly review and modify our security program to reflect changing technology, regulations, laws, risk, industry and security practices and other business needs.

### **Analytics Content**

We provide several predefined reports, calculations, algorithms, dashboards, content, and data discovery experiences that are built around Medicaid use cases. This out of the box approach



allows DHHR to leverage pre-built elements to quickly uncover valuable insights via easy querying and reporting for individuals and populations. As discussed in our technology overview, much of this content is aimed at simplifying the utilization of complex data while maintaining its nuances to increase accuracy of insights.

With our analytics content, data analysts, statisticians, business analysts, data scientists and researchers move faster, decrease their time spent cleaning and combining data, automatically update reports, tables, visualization, and algorithms, and enable a speedier implementation unmatched in the industry. Content is based on our rich healthcare experience and history of leading population health initiatives for our clients.

Cerner continues to enhance our systems to address the unique needs of the member, population, and client. We will be a partner with a robust solution offering that is widely used today by hundreds of clients and will continue to benefit DHHR now and into the future.

#### Services

While we are confident in the HealtheIntent Platform and our curated library of SaaS analytics content, we recognize that every Medicaid program has its own unique challenges, structure, and process. In our experience, our SaaS analytics content provides a solid foundation for clients no matter their current state. That said, we often build custom reports, dashboards, predictive models to better meet the needs of our clients. Our flexible and intuitive user interfaces also allow the end user to develop their own customized reports, dashboards, and predictive models.

DHHR is embarking on a path to modernization in establishing a centralized EDS business intelligence platform. To support the Department, we offer a wealth of industry knowledge and skilled experts. We are committed to providing a project team of experienced, high-performing associates to successfully deploy the West Virginia EDS in support of West Virginia's efforts to implement a modular solution. We have considered the unique requirements presented in the RFP and have assembled a premiere team to meet the scope and definition of the project.

Our team will remain committed to the project as we move through each of its major phases. A partnership with Cerner will provide DHHR reliable continuity of service and stewardship of the Medicaid program and its resources. One of our goals is to augment the talent and experience of the DHHR staff with our wide pool of knowledgeable leaders, analysts, engineers, and data scientists who not only know the tools that will deliver the best results but have worked side-by-side with our other Medicaid clients through their own enterprise data warehouse project initiatives.

# Implementation Approach

Cutting-edge technology, knowledgeable personnel, and Software as a Service analytics content is only valuable if the deployment, implementation, testing, training, and maintenance are successful. To accomplish this, Cerner proposes a phased approach for faster deployment of the EDS. Driven by our Medicaid Deployment Methodology (MDM), our approach has proven successful in the multi-supplier environments of Kansas and Montana and is informed by our 40-year history of managing and implementing healthcare technology projects in the government and private sectors. We have implemented our EDS solution in Medicaid, learning invaluable lessons in the evolving modular environment. Our delivery timeline is incremental



and guided by an agile philosophy that emphasizes delivering value early and often with the flexibility to adjust as needs, strategies, and goals change. This ensures that each requirement is met, that the system is tested more thoroughly, and that the functionality, content, and delivered services enable DHHR to efficiently attain their goals.

The HealtheIntent Platform, SaaS analytics content, talented team of associates, and our delivery approach has led the healthcare industry and has provided enormous value to the Medicaid market. No other vendor in the MMIS space has the depth and breadth of population health acumen, clinical expertise, and a proven track record of quickly delivering high-end value to their clients at the same level as Cerner. Our record of success in delivering data warehousing and advanced analytics to our clients demonstrates our expertise in providing the business intelligence, data analytics services, and applications required to continually and consistently provide value to DHHR.

# 1. DATA SOURCES, DELIVERY, AND DISPLAY

Refer to the relevant technical specifications located in *Appendix 1: Detailed Specifications* and pertinent narrative in *Section 4: Project Specifications* in this RFP to cover solution capabilities in this area. The Vendor should describe its approach to Data Sources, Delivery, and Display below. The narrative response for this category should be organized using the appropriate subject matter area as per *Appendix 1: Detailed Specifications*.

Extract, Transform, and Load (ETL) processes are predicated on solid DDI methods to minimize data load risks. Cerner's solution controls and executes all aspects of the ETL process. The HealtheIntent Platform receives data in near real-time or batch extracts from any system, including MMIS, financial, and claims data, as well as non-traditional sources that may be required in the future, such as vital statistics, education, and employment.

The HealtheIntent Platform receives data from multiple data sources in optional latencies from any system. Once the data processes and normalizes, the data is available for reporting. We accept discrete data in various formats, including, but not limited to, HL7, EDI, and CSV flat files. In addition to industry standards, Cerner has reusable templates to connect to over 1000 systems. Those templates facilitate higher quality and faster configuration when working with those vendors or similar systems. That library will continue to grow based on Cerner's extensive client base.

Following the acquisition of data from multiple sources and venues, the data is stored in its unstructured raw format. That raw data is persisted to support immediate use cases and reprocesses that data for future needs. The raw data is then processed beginning with code standardization. The HealtheIntent Platform supports proprietary codes by associating them to an appropriate industry standard code (LOINC, SNOMED CT, etc.) via machine learning and automated techniques. It also provides a layer of ontologies, on top of the standard terminologies, which are defined on a use case basis. For example, the way a diabetic member is identified may vary based upon the reporting program or use case in question.

Ontologies provide the ability to define concepts as different collections of industry standard codes, enabling the system to leverage standard terminologies while still maintaining the



flexibility necessary to support a variety of use cases. Incomplete data is detected and corrected upon being received, and inaccurate data is identified quickly.

Scheduled processing of the ETL will be designed and mutually agreed to as part of implementation. Typically, source systems will have varying transfer frequency and timings. Data is typically refreshed daily with subsets of the processes refreshing more or less frequently, as needed. The HealtheIntent Platform takes raw data, transforms it to information, and database storage holds the information to allow analytics to create knowledge from this information.

DD001

The solution should have the analytics ability to report benchmark dimensions and commonalities.

After DHHR data is standardized and normalized by our data and insights platform, HealtheIntent, CMS benchmarks are made available within the platform for immediate benchmarking analyses. With the flexibility of our offering, DHHR is not limited to only one set of benchmarks but can leverage West Virginia state-wide benchmarks and other internal benchmarks to analyze and report dimensions and commonalities. Finally, Cerner's data science application, HealtheDataLab, provides the capability to statistically analyze similarities in differences across many groups while also controlling for possible confounding variables to improve the precision and validity of benchmarking analyses.

DD002

The solution should provide documentation of all data objects and codes, abbreviations, and descriptions in logical and physical data models in a searchable, approved, current online data dictionary.

Our proposed offering includes a comprehensive data dictionary that depicts the system's metadata as a component of its overall data model. We will support DHHR's intent to develop and maintain an enterprise level metadata repository that aligns with industry standards and best practices. The metadata defined in the system's data dictionary is persisted and version history is maintained as the data model is enhanced. As displayed below, metadata includes:

- Data processing: source system, latency transformations, field mapping, calculations, etc.
- Standards: industry standard terminologies (CPT, ICD, SNOMED, etc.) as well as calculation standards (HEDIS, CPC+, Cerner-defined measure library, etc.)
- Metadata from source systems: propriety codes, update policy, source data expert, etc.
- Metadata related to data models: model calculations, terminology related to use case, etc.

We maintain reference data as a service. A team of Cerner terminology experts centrally monitors and maintains all supported reference data for updates. When standards bodies update their specifications, Cerner updates the associated HealtheIntent Platform reference data, tests, and applies the change to the reference library. That change is then available for use for current and future data sources. We will provide access to reference data and tools for maintaining it. The first step includes preloading and maintaining the reference data. Next, the reference data related to any data sources are loaded as part of our standard process. And finally, DHHR can augment that reference data via the EDS tools as needed.

Cerner technologies and processes maintain most of the metadata described above. DHHR has access to view and append that metadata. Our approach to metadata management includes:

 Ensuring business and technical users are receiving the requested data in the proper context to support decision making



- Providing uniformity in the definition of data
- Increasing the visibility of available DHHR data
- Increasing internal and external business user confidence in the data and HealtheIntent applications and tools
- Reducing consultation and training costs for internal and external business and technical users related to the definition and appropriate application of DHHR data

The HealtheIntent Platform offers proven methodologies for metadata aligned with the Data Management Plan. We ensure accurate and complete definitions and descriptions of all data contained within our solution and the relationships between said data. Companion files containing metadata are uploaded with each source file. Examples of metadata include field-specific details and more complex values, including calculations, data aggregations, and filters. The HealtheIntent Platform resolves semantic and context conflicts between numerous data sources, as well as provide synchronization and data replication including the ability to reflect data changes in data across multiple data stores.

The system exposes the most commonly used details directly in the application to promote ease of use and support generation of additional data models unique to DHHR's implementation. Properly credentialed users can view and create new metadata and new data models within the HealtheIntent Platform using the embedded build tools, EDS tools. Depending on the application and the knowledge level of the end user, this may be through queries executed using SQL or, for less technical users, in the form of system tools presented in a GUI format. This ability to create new metadata and new data models facilitates tailoring the reports and data views to specific DHHR use cases. The system includes auditing capabilities to track user activity and data model changes inclusive of creating new data models.

Tooltips are also used in both applications to provide additional information. When the user hovers over a visualization, a tooltip will appear with more details about the data being presented. Should a user make any modifications to a report, the system does keep track of changes through a version control. Lastly, in the top right-hand corner of our applications, there is also a search box (see the graphic below) where users can look for key words or dashboards. After navigating to a report, there is print functionality as well.

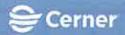
DD003

The solution should provide documentation of all data objects and codes, abbreviations, and descriptions in logical and physical data models in a searchable, approved, current online entity relationship (ER) diagram.

The HealtheIntent Platform provides the capability to identify, correct, and report data quality issues including data redundancy, incorrect values, missing values, and inconsistent values of the data sources. Users have the tools to continually monitor the quality of the data extracted. Please refer to the introduction at the beginning of this section for additional information.

Should an issue arise, we engage a dedicated Cerner team member to research the issue and complete the appropriate steps to resolve the issue. All issues are tracked with the associated Service Request.

We minimize impact to sources by incorporating non-standard data and converting it to industry standards. For example, if the source is sending proprietary codes, we convert these values to standards without impacting the source (such as LOINC, SNOMED CT, etc.). We also minimize impact to sources by accepting data in a wide range of formats which often allows reuse of already existing source extracts.



Should a critical issue stem from the source, Cerner may either void the data or communicate with the source to address the issue(s) (e.g., a claim with a paid date of 2050). Alternatively, users elect load the data or exclude it from the load.

Our expectations for the source are to provide the extract on a regular schedule as agreed, provide data dictionaries, and resolve data quality issues that may originate in their system. We provide specific examples of quality issues to facilitate rapid resolution.

In parallel with Cerner and these expectations, the process includes, but is not limited to:

- Data Discovery and Data Acquisition performed at the onset of each extraction.
- Exchanging documentation created to explain the specific data requirements requested to facilitate a successful data interface between i2iLinksTM and your specific systems.
- Should an issue arise, we engage a dedicated i2i team member to research the issue and complete the appropriate steps to resolve the issue.
- Discuss all appropriate quality issues within the data with the Source, Cerner, and i2i. All issues are tracked with the associated Service Request.
- We minimize impact to sources by incorporating non-standard data and converting it to industry standards.
- The i2iLinksTM application supports all interfaces and has monthly releases to address upgrades and any data quality issues.

DD004

The solution's data modeling tool should have current and historical versions available upon request.

We implement, operate, and maintain a data modeling tool to develop and maintain comprehensive structural metadata data models for data processed by, stored in, or delivered for consumption by our solution. This includes the documentation and illustration of data elements, structures, and their relationships of conceptual, logical, and physical data. Our application stores current and historical versions of the data and are available upon request. Additionally, historical versions of data are persisted and may be accessed should the need arise.

DD005

The solution should have the ability to detect, maintain, and analyze both predetermined and authorized solution user -created relationships among claims, persons, providers, and other entities.

We implement and operate a data modeling tool to develop and maintain comprehensive structural metadata data models for data processed by, stored in, or delivered for consumption by the HealtheIntent Platform. This includes the documentation of data elements, structures, and their relationships of conceptual, logical, and physical data.

DD006

The Vendor should maintain synchronization of claims and encounter record dates with provider and member record dates (a claim or encounter is always linked to the provider status and member status segments associated with the date of service).

As data is received into the HealtheIntent Platform, our data model includes the persistence of slowing changing dimensions including the value that were effective at for the various data ranges. We maintain the synchronization of claims and encounter record dates with the provider and member details. All details will be maintained and available for review.



**DD007** 

The solution should have the ability to produce multi-dimensional data objects including, but not limited to:

The HealtheIntent Platform supports multi-dimensional reporting capabilities of data in the EDS. HealtheEDW stores data in a dimensional model to facilitate rapid use of data. The project teams may be granted access to all or part of the data to define cohorts, identify correlations, quantify trends, and graphically explore the data. The solution includes capabilities that allow DHHR's staff to analyze their programs with use of subsets and multi-dimensional views of the data. The application supports trend analysis for a user- defined period across departments. These trends are predefined in a report or defined at runtime via the ad-hoc reporting options. The visualizations are interactive with options to receive more details via tool tip (hover), filtering results, and drilling into sub views. These visualizations are commonly organized so that you view various operational, financial, and programmatic initiatives and then drill into the details that drive a metric. Often these drill paths are several levels deep to support detailed analysis.

#### DD008 Data cubes

HealtheAnalytics supports many data model configuration options so that design leverages data cubes, hybrid or alternative approaches based on uses case. For example, core concepts such as claim, provider and member data are aligned into dozens of fact and dimension tables as part of our standard data model. This data model structure is easy to understand and enables joins across large numbers of tables to support a wide range of analysis. Advanced users often query these tables directly with SQL while less sophisticated users commonly interact with the cubes via ad hoc reporting models. Authorized advanced users also define new cubes. Once defined, cubes may be shared based on the platforms built in security features.

#### DD009 Customized tables

Authorized DHHR users leverage Data Set Designer to define new tables based on user-defined processing rules and parameters. Data Set Designer supports a wide range of use cases including multistep transformations that may aggregate, filter, partition, reformat, execute logical rules and perform complex calculations. Complex logic is defined by the user based on the broad capabilities of SQL.

Once logic is defined, tables may be created ad hoc or be defined to refresh on a regular schedule. Security to view and edit the customized tables is also configurable.

Client frequently use Data Set Designer to protype new logic that is aligned with specific use cases. For example, one client used Data Set Designer to evaluate Skilled Nursing Facility (SNF) utilization in detail and determine populations that would benefit from home health services in leu of SNF.

#### DD010 Data marts

Cerner includes a suite of out of the box data marts as well as the ability for DHHR to independently define data marts. These data marts are highly configurable via Data Set Designer. Please refer to our response to DD009 for full details.

#### DD011 Materialized views

Authorized DHHR users leverage Data Set Designer to define materialized views. All content defined in Data Set Designer results in a physical table that leverages massively parallel processing and projection configuration to maximize performance. These materialized views are



highly configurable via Data Set Designer. For full details, please refer to the response to DD009.

DD012

And to develop, implement, and maintain both derived and aggregated data including, but not limited to:

Cerner has a multilayer approach to support a wide range of derivation and aggregation use cases. Out of the box data models support the most common derivations and aggregations including claim costs, unique member counts and units of service. Non-technical users simply choose the desired aggregation and the system automatically executes joins and calculations to produce the output

The non-technical ad hoc reporting framework also supports user-defined derivations and aggregations. Users define calculations through a graphical tool with a library of over 200 functions including string manipulation, mathematical, basic statistics, date function, and logical. For example, a user might define a standard deviation calculation to determine outliers.

Data Set Designer is also available to DHHR users for advanced calculations. Data Set Designer supports a wide range of use cases including multistep transformations that may aggregate, filter, partition, reformat, execute logical rules and perform complex calculations. Complex logic is defined by the user based on the broad capabilities of SQL.

#### **DD013**

Total claim costs

The HealtheIntent Platform enables the ability to calculate total claims costs across a number of different data variations. For example, the platform shows claims costs for a single member, claims costs for all members who received a particular procedure, and/or claims costs for a single procedure performed at one hospital versus another. Our ability to easily segment data for simple or complex comparisons is achieved with our easy to use analytics tools.

#### DD014 Unique member counts

HealtheEDW enables the ability to receive unique member data to provide unique member counts across the West Virginia Medicaid population. As the member information is received, it is aggregated and normalized into a single record for each unique member that is reviewed at an individual member level and viewable as part of a larger unique member population for program analysis, comparisons, and other reporting metrics. Additional calculations may be performed against any data in the database.

#### **DD015**

Units of service

HealtheAnalytics includes calculations to sum units of service at various levels such claim, member, provider, etc. Additional math and logic calculations may be performed on any data in the database.

#### DD016

Benchmarks

After DHHR data is standardized and normalized by our data and insights platform, HealtheIntent, CMS benchmarks are pre-loaded within the platform for immediate benchmarking analyses. Additional external benchmarks such as state measures or specialty benchmarks are loaded into the platform for DHHR users. The system also supports internal benchmarking. For example, benchmark performance by county monthly to determine trends and compare to future performance.



Additionally, HealtheDataLab, provides the capability to statistically analyze similarities in differences across many groups while also controlling for possible confounding variables to improve the precision and validity of benchmarking analyses.

# DD017 The solution should maintain current and historical data.

All data versions of current and historical data are persisted and available for reporting. Cerner's platform will track slowly changing dimensions in data, for example providers in network five years ago, member eligibility spans, and more.

Our platform also persists historical data, for example claims for the last ten years, and the data is made available for trending over time. Historical data values are persisted with the related details, such as a claim that was submitted three different times with three different sets of values.

# DD018 The solution should maintain current and historical claim data including, but not limited to:

Current and historical data is persisted and available for reporting and trending over time. For example, the historical data is reported on for the past 10 years to view trends and make future predictions leveraging our forecasting reports. Historical values are persisted for an event, as well. For example, claims submitted multiple times with different value sets will be stored and available.

# DD019 Date of payment

Claims data with the date of payment will be persisted in for every claim and for every version of that claim.

## DD020 Date of adjudication

Claims data with the date of adjudication will be persisted in for every claim and for every version of that claim.

#### DD021 Prescription date

Claims data with the prescription date will be persisted in for every claim and for every version of that claim.

#### DD022 Date of service

Claims data with the date of service will be persisted in for every claim and for every version of that claim.

# DD023 The solution should develop and maintain standard table joins that allow linkages among member records, provider records, claim/encounter records, and all other solution data to enhance querying, reporting, and analytics.

Cerner has out of the box logic built in the platform that will enable DHHR to add additional linkages easer for easier standardization, normalization, and person matching. The resulting longitudinal record is easier to analyze and join. Based on that physical data structure, Cerner has a multilayer approach to support a wide range of joins.

Out of the box data models support the most common derivations and aggregations including claim costs, unique member counts and units of service. Non-technical users simply choose the desired aggregation and the system automatically executes joins and calculations to produce the output



Data Set Designer is also available to DHHR users for advanced calculations. Data Set Designer supports a wide range of use cases including multistep transformations that may aggregate, filter, partition, reformat, execute logical rules and perform complex calculations. Complex logic is defined by the user based on the broad capabilities of SQL.

DD024

The solution should have the ability to receive and accept interfaces and exchange data with government agencies, data vendors, industry groups, providers, insurers, and health information exchanges as designated by the Department.

Cerner has been a voice for interoperability in health care by connecting to more than 85 distinct EHRs, more than 185 distinct claims and payer vendors, more than 104M linked disparate records, and more than 32 unique open data sources. The availability and exchange of data is essential in improving the clinical outcomes of Medicaid members and bending the cost curve in health care. We maintain interfaces with over 1000 unique data sources and are well-versed in multiple formats and interfaces necessary for modeling and metadata.

We have established our commitment to modernization and use data to drive significant and sustained improvements in Medicaid Information Technology Architecture (MITA) maturity. We support the modularity standard with our flexible approach to systems development, including open interfaces and exposed APIs with the separation of business rules from core programming. The use of open interfaces and exposed APIs assures extraction and export of needed data to various agencies, including CMS, and enables DHHR users to retrieve raw population data.

DD025

The solution should have the ability to assign a single unique identifier to all members, providers, and claims received from all data sources.

Cerner's Master Person Matching features algorithms to match members using demographic properties and assigns a unique identifier to each member. Algorithms are used for analytics where the threshold of the matches does not require human validation. Additionally, when an automated match is inconclusive, Cerner staff intervenes to make matches and consult with client resources where necessary. Ultimately a single Master Person Matching ID is assigned to each unique member.

Generally, provider and claim data have identifiers that are more standardized. These identifiers still vary source to source and Cerner mappings reconcile and join data despite variance. Common identifiers that we leverage include NPI, payer provider ID and claim ID. Algorithms are augmented based on source characteristics and DHHR needs.

DD026

The solution should have the ability to automatically identify duplicative members, providers, and/or claims- related information received from a single or multiple source(s), and merge that information into a single record.

Intrinsic to the HealtheIntent Platform is our ability to aggregate and normalize data points to ensure that duplicative data is recognized and merged into a single instance. Should data be merged into a single instance, all historical data elements are persisted and available for review at any time.

DD027 The solution should have the ability to schedule interfaces and data exchanges.

We work with DHHR through the DDI phase to define data set processing to schedule the exchange of data through interfaces. Additionally, our ability to connect to health information exchanges and other exchange methods facilitates the automatic exchange of data to ensure the EDS is continually updated.



Data Syndication API facilitates the bulk delivery of the HealtheIntent Platform data on a West Virginia defined schedule. It provides direct, low-level, asynchronous access to the information that the applications create, curate, and operate against. This API is used to populate third-party data stores for research, reporting, or analytical activities. The HealtheIntent Platform provides incremental data uploads to reduce the need for bulk data transfers.

DD028

The solution's interface processing should not adversely affect other activities, such as regular operations, other jobs, reporting, queries, analytics, research, and extract, transform, load (ETL).

Cerner has experience loading trillions of records daily without impacting production performance. Cerner's approach includes utilizing different infrastructure for ETL processing based on Hadoop which is optimized for processing exceptionally large data sets. Once processed, that data is transferred to the database storage. The load leverages out of the box database storage priority settings to ensure queries and other analytics take precedence over the load.

DD029

The solution should have the ability to validate that all files meet the extract, transform, load (ETL) edit standards prior to entering the production database, such that any files or content failing to meet standards are returned to the originator and flagged for review.

The proposed HealtheIntent Platform includes our Data Quality Monitoring technology and services to ensure the ETL data acquisition process is performed in a highly reliable manner. The system performs checks against incoming data sets to ensure the data being sent from source systems is as expected. This includes macro-level checking for things such timeliness or ensuring a data set is not empty down to field-level validations such as expected data type, i.e. text, numeric, etc. We also support the ability for more advanced checks against data set trends.

All issues are tracked via a status dashboard monitored by the Cerner team. Critical issues will result in data being prevented from loading to production. Our team will take steps to correct the issue including updating Cerner processes and coordinating with source systems. Any issues are tracked in our online issue tracking system, eService, through resolution. For more information regarding our data quality monitoring services, please refer to the Data Quality section in this Attachment.

DD030

The solution interface design and Interface Control Document should be extensible, scalable, and adjustable to work with business and technology changes.

Cerner produces an Interface Control Document (ICD) for each data source, documenting the processes, methodologies, mechanisms, and protocols for the source. This centrally created and maintained documentation is stored on Cerner's Wiki, in locations accessible to DHHR, DHHR designated users and Cerner team members, for the most efficient maintenance. Detailed information for each data element in each file is maintained on the Wiki. The Interface Control Document is created to be extensible, scalable, and adjustable to meet DHHR's ever changing business and technology needs.

DD031

The solution should have the ability to incorporate new data sources and changes to existing data sources as part of routine maintenance.

The HealtheIntent Platform will enable DHHR to scale a 10% growth target annually and support the ability to support larger growth percentages if the business need arises over the life of the contract. Cerner will provide DHHR with a dedicated team with extensive experience managing new data sources and changing existing data source through routine maintenance.



Additionally, our overarching experience with managing data sources for clients across the country enables the ability to apply learned knowledge to DHHR to make changes faster with higher levels of efficiency. For example, should a payor make a change in one state that is later applied to West Virginia, we will be able to use its knowledge of the initial change and prepare the Department for pending changes in its system.

DD032

The solution should have the ability to ensure the data conversion and extract, transform, load (ETL) processes adhere to the standards and guidelines of the Health Insurance Portability and Accountability Act (HIPAA), Centers for Medicare & Medicaid Services (CMS), Medicaid Information Technology Architecture (MITA), National Institute of Standards and Technology (NIST), and other government and industry standards guiding secure, consistent, accurate, and efficient data exchange.

Our standard solution and applications are designed to support federal regulatory requirements as appropriate to given applications. Modifications may be needed to meet individual state requirements depending on their nature such as for prescription formats, state regulatory submissions for public health, vital statistics reporting, or other requirements.

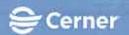
We will assess applicable regulatory changes that impact our software applications and work with our clients to support their continued compliance efforts. Cerner has a regulatory research and strategy team that reviews new federal rulemaking for regulatory developments. The team conducts review of rules for business requirements that should be identified for review with our solution strategists and development teams to determine the abilities of existing capabilities to enable compliance to the requirements of the regulations, to identify potential gaps or enhancements for development prioritization and to develop knowledge transfer resources and sessions for associates and clients on recommended guidance to meet the new requirements. Where these requirements work to represent development gap or enhancement need, the regulatory team works with solution teams and Cerner business units on prioritization and response planning.

DD033

The Vendor should coordinate with the Department and maintain a schedule that documents when data is expected, when it is received, when it is processed by extract, transform, load (ETL), and when it is loaded to the data warehouse tables and database objects.

Scheduled processing of the ETL will be designed and mutually agreed upon as part of implementation. All design needs will be documented in the Interface Control Document and stored within the Project Portal. Typically, source systems will have varying transfer frequency and timings. Data is typically refreshed daily with subsets of the processes refreshing at individually set frequencies.

In addition to technology applications, users optimize performance for DHHR's specific use cases. Options include the ability to process data in batch and store the results in the database. These batch jobs may be scheduled to execute on an ongoing basis. This batch processing includes format transformations, aggregations, calculations, risks adjustment or more complex logical or mathematical calculations.



DD034

The Vendor should ensure the solution components that are web based have cross-browser compatibility over the life of the contract and support software utilization in the current version and two (2) prior versions at a minimum for the following browsers including, but not limited to:

Cerner provides web-enabled applications that are optimized and available for viewing by users utilizing computing devices such laptops or desktop computers. We are committed to continually evaluating browser capabilities and adjusting based on the most commonly utilized across the industry. We support the latest two versions of standard browsers, such as Chrome®, Firefox®, Internet Explorer®, and Safari®. We support varied operating systems, such as Windows®, iOS®, and Android®.

DD035 Microsoft

Yes. Please refer to our response to requirement DD034.

DD036 Apple products

Yes. Please refer to our response to requirement DD034.

DD037 Google Chrome

Yes. Please refer to our response to requirement DD034.

DD038 Firefox

Yes. Please refer to our response to requirement DD034.

DD039 Internet Explorer (IE 7 or greater)

Yes. Please refer to our response to requirement DD034.

DD949 Other browsers as requested by the Department

Per Addendum #4, requirement DD040 has been removed.

DD041 The solution should support non-linear "undo" ability to ensure any action performed at any time in a single work session within a given component can be reverted to a former state.

Cerner's data management application enables the ability to complete both linear and non-linear "undo" actions during a session. In addition, our data management solution enables the ability to revert to a previous iteration of the applied DHHR content.

DD042 The solution should have the ability to support Windows-based or similar shortcuts including, but not limited to:

Cerner's data management application supports standard keyboard shortcuts as defined below. Additionally, our application also supports application-based shortcuts such as ctrl+enter to run an SQL query.

DD043 Ctrl+c for copy

Yes. Please refer to our response to requirement DD042.

DD044 Firefox

Yes. Please refer to our response to requirement DD042.



DD045 Ctrl+z for undo

Yes. Please refer to our response to requirement DD042.

DD046

The solution should provide electronic audit trails for every interface file input when received, when processed by extract, transform, load (ETL), and when loaded to table(s).

All interface files are saved and persisted for the length of the contract with associated metadata such as receipt date and time. Similarly, data processing audit trails record metadata on data processing status.

DD047

The solution should have the ability to revert to a previous version when an implemented change causes an undesirable solution impact, within a timeframe determined by the Department.

As part of Cerner's operations management, we enable the ability to revert content applied to the DHHR environment and return it to the previous version in the event of an undesirable impact. Cerner will work with DHHR to define the timeline based on the complexity of the applied change and the severity of the impact to the DHHR environment.

DD048 The solution should have the ability to associate clinical data with the claim record.

Cerner is a market leader in this space and excels at aggregation of clinical, claims, and other types of data. The individual sources of data are linked via Cerner's Master Person Matching so that all sources are utilized to make decisions. As clinical data is received, it is linked to the member record including associated claims. Pre-built as well as client defined algorithms leverage details from all linked record. For example, many of Cerner's library of over 1000 quality measures reference details such a revenue and procedure codes from claims as well as unique details from clinical data such as lab results, vital signs and assessments.

DD049 The solution should have the ability to view activities during integration such as job schedules, job times and load processing.

Cerner's data quality monitoring ensures that data received at both initial load and on a day-to-day basis is reliably monitored. The HealtheIntent Platform runs several algorithms and checks to ensure data volume, quality, and integrity of all incoming data. Automated data validation routines ensure data loaded is consistent and complete as compared to the balance files. For example, we identify if a file is missing, if a row or column count is off, if volume trending is abnormally up/down, null values, invalid codified values (e.g. "zz10" is not a valid ICD 10 code), improperly formatted data (e.g., text received for a numeric field), suspect data (e.g., a claim dated 2023), integrity checks (e.g., a claim service line without a parent claim header line), and many other claims, enrollment, and clinical source checks.

Records that pass validation proceed with processing. Those records that fail validation are monitored alongside other system and quality checks so that they are followed up as part of operations. We provide alerts for critical issues and disregard the suspect data to prevent it from impacting production reports. To include or exclude additional records, we reprocess the platform at any point in time

Records are centrally monitored via the Data Quality Monitoring dashboard to quickly identify problems, trending, and resolution. The dashboard is monitored by a Cerner team that provides services to evaluate issues as they arise. For example, if a file was not received, we send a message to the source system requesting the data, and tag that email in a Service Request to track ongoing resolution. To prevent alert overload, our services team provides a deeper level of



assessment with human interaction and evaluation. Our team reviews issues and initiate appropriate procedures, e.g., Service Request tracking. Critical issues are targeted for automated alerting and messages.

We provide a library of over 150 quality checks and are continually adding to this number. All of our clients share the benefits as we add new checks and incorporate enhancements across our solution. As part of our implementation strategy, we will conduct strategy sessions, recommend best practices based on our experience, and work with DHHR to prioritize the data validation crucial to your success.

DD050

The solution should have the ability to store and analyze semi-structured and unstructured data, such as case notes.

Cerner provides a broad data model that enables the ability to create and manage data sets, relationships between data sets, and the semantic business layers that are created and published. Custom and standard data models include text data that is structured, semi-structured and unstructured. Data may be analyzed via SQL, open source data science tools, Tableau and BusinessObjects. Data may also be exported from the HealtheIntent Platform for analysis independent of Cerner.

DD051 The solution should have the ability to analyze and report on data integration audit logs.

We persist the original data sent to us and maintain a full audit trail of all transactions to support your needs. Cerner's system includes a centralized audit logging application, P2Sentinel, which records the details of who made changes to tables in a very granular level. In addition, we provide versioning within the application which helps organize and track what needs to be released and revert to previous releases if necessary.

Our solution also includes capabilities and services to continually monitor system utilization for resource contentions, high traffic volumes, and slowed response times, and proactively adjust to ensure connectivity and database availability. Data ingested by the HealtheIntent Platform undergoes a data validation process to ensure data quality.

DD052

The solution should define a hierarchy to resolve conflicts between the same data elements from different sources.

Cerner provides algorithms that leverage conflict resolution hierarchies. For example, member demographic conflicts are resolved based on a combination of hierarchy and data recency. In addition to out of the box algorithms, algorithms are configurable. Cerner recommends persisting the conflicts as well as the reconciled value(s) so that algorithms may be refined different approaches can be applied to different use cases. Typically, only the reconciled values would be exposed to most users for simplicity.

DD053

The solution should have the ability to accept data in a variety of formats from different sources and standardize.

The HealtheIntent Platform receives data from multiple data sources in optional latencies from any system. Cerner accepts discrete data in various formats, including, but not limited to, HL7, EDI, and CSV flat files. In addition to industry standards, we have reusable templates used to connect to over 1000 systems. These templates facilitate higher quality and faster configuration when working with those vendors or similar systems. Our library will continue to grow based on Cerner's extensive client base.



Following the acquisition of data from multiple sources and venues, the data is stored in its unstructured raw format. That raw data is persisted to support immediate use cases as well as the ability to reprocess that data for future needs.

Raw data is then processed beginning with code standardization. The HealtheIntent Platform supports proprietary codes by associating them to an appropriate industry standard code (LOINC, SNOMED CT, etc.) via machine learning and automated techniques. The Platform also provides a layer of ontologies, on top of the standard terminologies, which can be defined on a use case basis. For example, a diabetic member may have historically been identified based on claim procedure and diagnosis codes. Cerner ontology recommends searching for certain laboratory results and medication details that would typically not be found in claims. The ontology library contains 32,000 preloaded use cases.

DD054 The solution should have the ability to identify, correct, and report data quality/defect issues.

The proposed solution includes our Data Quality Monitoring capabilities. These consist of both automated and manual features to ensure the ETL data acquisition process is performed in a highly reliable manner. The system performs checks against incoming data sets to ensure the data being sent from source systems is as expected. This includes macro-level checking for things such timeliness or ensuring a data set is not empty down to field-level validations such as expected data type, i.e. text, numeric, etc. We also support the ability for more advanced checks against data set trends. For example, the system identifies if a data set that historically includes both male and female values is sent with only male values. The system populates a status dashboard of incoming data sources monitored by the Cerner team. Should an issue with a source be found, the Cerner team will take steps to correct the issue and, if necessary, log the issue and alert the appropriate parties for further resolution. Any issues are tracked in our online issue tracking system, eService. Please refer to the Data Quality section in this Attachment for more information regarding our Data Quality Monitoring capabilities.

DD055

The solution's development environment should have the capacity to support all components of the solution.

Every Cerner environment has the same core SaaS software and SaaS hardware. All applications of the solution are supported in the configuration environment.

DD056

The solution's environments should have the ability to handle scheduled or on-demand requests to refresh data with a referentially intact subset of data.

Cerner's recommendation is to use full production data refreshed on the same schedule for all environments. The deidentified environment provides masked PHI data for training and analytics purposes. As part of our implementation and operations strategy, Cerner will work with DHHR to define refresh intervals, if desired.

DD057 The solution should have a production environment that is used to deploy the solution.

Cerner is committed to providing DHHR with the necessary production environment to deploy the solution.

DD058

The solution's production environment should have the ability to support all components of the solution.

The production environment supports all applications proposed as part of our solution offering.



DD059

The solution should contain a data access component that serves as a central access point for authorized solution users.

Cerner's applications are accessed via the web from a single access component by authorized users to perform all functions.

DD060

The solution's data model component should be maintained in an open systems modeling tool that can generate reports.

Our interpretation of an open systems modeling tool is that the underlying data model of our proposed solution is configurable and the pertinent details about our data model are visible and may be interacted with by authorized system users. If this assumption is incorrect, we appreciate the opportunity to discuss this concept further with the Department.

Cerner understands the importance of data models designed around DHHR's data, business practices, policies, and needs. Data models assist DHHR in making informed decisions by offering actionable, detailed data for deeper visualizations and insights.

Our solution is a cloud-based infrastructure, which houses, maintains, and manages the HealtheIntent Platform and scales in near real-time to meet the service levels and requirements of a best-in-class analytics application. We maximize the use of configuration and configurable technology to meet the business requirements of the MMIS environment.

We have a proprietary data ingestion process and probabilistic algorithms to ensure matching of all disparate data. We then normalize and transform the data into a single concept for improved decision support, analytics, research, and new knowledge discovery.

Source data goes through a structured process whereby it is mapped to data models within the HealtheIntent Platform. This allows HealtheIntent applications to organize the data and align it to health care concepts as well as process it through the master person matching logic. As a result, these mappings create a longitudinal record for the member that contains integrated data across the disparate sources.

Our solution includes easy-to-use tools to modify existing data models and define new data models. Specific data models are flexible based on specific area, program, and population. This flexibility provides specific use case functionality and configuration to support hybrid models to accomplish DHHR's data model goals and needs. Read and write access to data models is configurable. All configured data models are stored within HealtheIntent and accessible for reporting on the underlying model metadata as well as reporting based on the activity data in the models. Data may also be exported by a user or exported via APIs.

Our proposed solution will ensure data models are depicted for each deployed environment upon implementation of changes. We will work with DHHR to provide input and review regarding the design of reports, data models and other content to ensure the system meets the intended business objectives. We will provide recommendations for most content based upon industry standards and our broad experience. We also anticipate use cases that are unique to DHHR and will require collaboration between Cerner and DHHR to design new content. From the development environment, new functionality is promoted to system test, model office, and production.

As part of our implementation and ongoing operations strategy, we will conduct strategy sessions to ensure DHHR has the reports available to you based on current regulatory



requirements, state-defined requirements, and DHHR identified reports within this RFP. We recommend best practices based on our experience and work with you to refine the approach based upon your feedback. It is also important to note that-Cerner has a library of reports ready for DHHR's use at the point of implementation. DHHR will have access to our continuum of report writing ranging from simple to complex, multi-step reports that require advanced SQL report writing skills.

Cerner's Data Set Designer enables DHHR to take a data set that exists within the database to create a new data set that follows user-defined processing rules and parameters. Data Set Designer is part of the multistep transformation process that is used to create aggregation data sets, apply complex calculations, create temporary data sets to use as part of the final data set creation process, and other capabilities. Our analytics platform has the flexibility for DHHR to create your own data sets and to leverage out of the box content to generate reports.

DD061

The solution's data model component should be maintained in an open systems modeling tool that can enforce object-naming standards.

Flexibility is a key differentiator of the HealtheIntent Platform. We allow authorized DHHR staff to leverage existing HealtheIntent data models or choose to create new data sets to support DHHR's requirements and needs as well as enforce object-naming standards that will be defined during requirements validation sessions and mutually agreed upon.

During these requirements validation Sessions, DHHR will have the ability to approve HealtheIntent's pre-built data model designs if DHHR would like to include them and then approve West Virginia specific data models. Our proposed applications will design, develop, implement, and maintain an enterprise data model designed around DHHR's business practices and policies. DHHR will be able to quickly benefit from the HealtheIntent Platforms ability to provide pre-built, role-based dashboards, intuitive business intelligence tools inclusive of data visualization capabilities, and the ability to create and leverage custom data models and structures.

Please refer to our definition of open systems modeling tool provided in our response to requirement DD060.

DD062

The solution's data model component should be maintained in an open systems modeling tool that can import and export metadata.

Cerner is a voice in strong support of interoperability in health care. The availability and exchange of data is essential to better focus on the Medicaid member, improve clinical outcomes, and bend the cost curve in health care. We have interfaces with over 1,000 entities, and the number continues to grow, proving our experience at establishing, maintaining, and developing interfaces. The HealtheIntent Platform supports multiple formats and options for exporting and interface specifications necessary for models, metadata, and additional supporting information.

Please refer to our definition of open systems modeling tool provided in our response to requirement DD060.

**DD063** 

The solution's data model component should be maintained in an open systems modeling tool that can provide version control of logical and physical data models.

Cerner will create, update, and maintain clear and consistent formats for all conceptual, logical, and data models compatible with recognized State and Federal (including CMS) data standards,



guidelines, and architecture. HealtheIntent accomplishes this by including a variety of visual displays to aid in comprehension and use. Standard reports highlight different data sources, including claims, beneficiary satisfaction and prescribing data to drive analytics. The ability to manipulate data enables users to identify trends and further analyze why they are occurring. Our analytics are designed around specific use cases and powered by the data ingestion, standardization, and calculation capabilities of the HealtheIntent Platform.

The HealtheEDW application allows users to build data models to collect data and display it visually to depict relationships between data points. Users may create independent models on any of the data in the enterprise data warehouse. The system also supports the organization of analytics content by project with each project typically corresponding to a business use case. Content may be shared based on role and user association. Users may decide to keep content private or grant access to additional users or groups of users. Cerner has concepts already created and we can work with the Department to create concepts that are specific to DHHR.

Please refer to our definition of open systems modeling tool provided in our response to requirement DD060.

DD064

The solution's data model component should be maintained in an open systems modeling tool that can provide forward-engineering abilities.

The HealtheEDW application will enable DHHR to create and develop data models at a high level and to fill in those details over time, as data elements become available or need flexed based on business needs. DHHR will be able to create placeholder models within the analytics platform for future use. DHHR will be able to quickly benefit from the HealtheIntent applications ability to provide pre-built, role-based dashboards, intuitive business intelligence tools inclusive of data visualization capabilities, and the ability to create and leverage custom data models and structures.

Please refer to our definition of open systems modeling tool provided in our response to requirement DD060.

DD065

The solution's data model component should be maintained in an open systems modeling tool that can provide reverse-engineering abilities.

The HealtheEDW application provides the Cerner project team and DHHR with the flexibility to use or modify pre-built data models to support DHHR's requirements and needs as defined and mutually agreed upon, during requirements validation sessions.

Please refer to our definition of open systems modeling tool provided in our response to DD060.

DD066

The solution's data model component should be maintained in an open systems modeling tool that can support volumetric calculation abilities.

HealtheAnalytics will support volumetric calculations through metadata queries. DHHR will have the ability to apply out of the box content that is immediately available or independently build queries based on state-specific requirements for reporting.

Please refer to our definition of open systems modeling tool provided in our response to DD060.



The solution's data model component should be maintained in an open systems modeling tool that can support comparison abilities for different logical and physical data model versions.

The HealtheIntent Platform maintains clear and consistent formatting, and provides version control for all conceptual, logical, and physical data models. This is accomplished via a variety of visual displays to aid in comprehension, comparison, and use. Cerner's analytics application persists both the current and historical version of the data model and enables the ability to revert to the previous version for comparison.

Please refer to our definition of open systems modeling tool provided in our response to DD060.

**DD068** 

The solution's data delivery component should maintain the following information related to the authorized solution user: acknowledgement of data extraction.

Cerner's P2Sentinel audit logs include acknowledgements of data extraction.

**DD069** 

The solution's data delivery component should maintain the following information related to the authorized solution user:

Cerner's P2Sentinel audit details maintain logging details of the authorized solution user and can be easily viewed with our front-end GUI.

DD070 Receipt of data

Cerner P2Sentinel tracks date, timestamp, and user details upon receipt of data. Please refer to requirement number DD069.

DD071 Data elements requested

Cerner's P2Sentinel tracks all data elements included in the extract. Please refer to requirement number DD069.

DD072 | Selection criteria for extraction

Cerner's P2Sentinel tracks all filter logic, including the full query used to select the data used in the extract. Please refer to requirement number DD069.

DD073 | Method of export

Cerner's P2Sentinel tracks the which technology was utilized for the export. Please refer to requirement number DD069.

DD074 Others as defined by the Department

Should there be modification to the regulatory requirements specific to audit logging, Cerner would address them as appropriate to our services and solutions. Additionally, we understand that DHHR's business needs are ever-changing and Cerner will work with you to address those needs in good faith as those needs arise.

DD075 The solution's data delivery component should have the ability to extract the data in all industry-accepted formats including, but not limited to:

Data is extracted from the HealtheIntent Platform by authorized users in various forms, and these files are then be forwarded by the user as needed. HealtheIntent enables users to export data in a variety of formats, including Word, Excel, HTML, XML, TXT, CSV, PDF, or JPEG.



Data is also be extracted in flat-file formats via a data syndication API. Data syndication facilitates the bulk delivery of the HealtheIntent Platform data, providing direct, low-level, asynchronous access to reports derived from all applications.

DD076 Excel

Yes. Please refer to our response to requirement DD075.

DD077 Joint Photographic Experts Group (JPEG)

Yes. Please refer to our response to requirement DD075.

DD078 Others as requested by the Department

Yes. Please refer to our response to requirement DD075.

DD079 Word

Yes. Please refer to our response to requirement DD075.

DD080 Hyper Text Markup Language (HTML)

Yes. Please refer to our response to requirement DD075.

DD081 Software and Services (SAS)

The solution includes our data science tool, HealtheDataLab. Cerner includes industry standard extract formats and highly configurable flat file extract formats. Most third-party applications are compatible with at least one of these formats. These formats are commonly used with statistical tools such as SAS and open source data science tools.

DD082 Graphical User Interface (GUI)

Data is viewable in and extractable from a GUI including options in Tableau, BusinessObjects and HealtheAnalytics GUI. Please refer to our response to requirement DD075.

DD083 Extensible Markup Language (XML)

Yes. Please refer to our response to requirement DD075.

DD084 Application Programming Interface (API)

Yes. Please refer to our response to requirement DD075.

DD085 Text

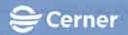
Highly configurable flat file text formats are supported. Please refer to the response to requirement number DD075.

DD086 Comma-Separated Value (CSV)

Highly configurable CSV flat file formats are supported. Please refer to the response to requirement DD075.

DD087 Delimited text

Highly configurable delimited flat file text formats are supported. Please refer to the response to requirement DD075.



DD088 Portable Document Format (PDF)

Yes. Please refer to our response to requirement DD075.

**DD089** 

The solution's data delivery component should maintain details of requests, including time stamp, duration, and volume of data extracted.

All activity and actions across the HealtheIntent Platform applications are tracked, logged, and visible in our auditing tool, Cerner P2Sentinel.

DD090

The solution should have the ability to schedule data extraction based on time or occurrence of events.

Data Syndication API facilitates the bulk delivery of the HealtheIntent Platform data on a West Virginia defined schedule. It provides direct, low-level, asynchronous access to the information the applications create, curate, and operate against. This API is used to populate a data warehouse or other third-party data store for research, reporting, or analytical activities. Cerner's HealtheIntent solution provides incremental data uploads to reduce the need for bulk data transfers.

DD091 The solution should have the ability to delete/clean up extracted data sets.

Extracts will be automatically deleted three weeks after they are created. In the event DHHR determines the data set needs to be persisted, authorized users can manage those data sets.

DD092

The solution should have the ability to extract proportionally large volumes of data based on specified selection criteria.

Cerner leverages industry leading tools to support interactive visualizations and the most common export scenarios with volumes often exceeding several million rows of data. In addition, Cerner's Data Syndication API support very large exports. Data Syndication has no known export limit with other clients exporting upwards of 100 trillion rows of data.

DD093 The solution should have the ability to monitor and control data extraction requests.

Access to functions within the Platform is controlled by role-based security settings and DHHR will have the ability to determine which users will have access to complete data extraction. In addition, role-based security also allows DHHR to control which subsets of data different users have access to. All actions are logged and available for reporting with in P2Sentinel.

DD094

The solution should have the ability to send automatic alerts to authorized solution users when errors occur during the data delivery process and other user interaction processes.

Unlike older technologies that rely on long delays to extract data, Cerner leverages a database storage, which utilizes columnar storage, and massively parallel processing (MPP) to quickly extract large volumes of data. This technology supports the extract of nearly one million rows in about one minute. As a result, the need to send alerts or apply other processes is exceedingly rare. The system does support an email alert capability should it be needed.

**DD095** 

The solution should have the ability to notify the authorized solution user as to the details of the extract, including estimated duration and size.

HealtheAnalytics is powered by the HealtheIntent Platform which enables DHHR to quickly extract data and run analytics to meet the business needs of your organization. Estimates are available at the beginning of the extraction with the ability to extract nearly one million rows in about one minute. More detailed estimates will be available for extracts that are very large.



The solution should have the ability to generate reports with summary and detail information on data delivery requests, executions, and other authorized solution user interaction processes.

Cerner recommends a data governance process to track access to data and approve extract request as necessary. Cerner tracks this process utilizing our project tools or utilize client tools as needed. When practical, Cerner recommends users be given access to execute the extract directly while still being controlled by the data security settings of the system.

When an extract is performed, our solution tracks via our auditing application, P2Sentinel which provides internal auditing and routine monitoring, supporting your needs for enforcing policy regarding information security and privacy. Our auditing application supports the ability to audit accesses to the member record and enables incident management through alerting and notification and definition of specific rules for monitoring suspected abuse, providing a proactive approach to safeguarding confidential data.

DD097

The solution should have the ability for authorized solution users to request, develop, and/or schedule dataset creation and monitor the status.

The HealtheIntent Platform allows authorized users to design, save, and share configurable dashboards and reports and permits authorized users to create reports or dashboards within our integrated business intelligence tools. In addition, authorized users have the options to load external datasets and transform datasets. These processes may be run on demand or scheduled. Our workflow monitoring tools allow DHHR to monitor the status of the solution to ensure optimal performance at all times.

Requests to configure new datasets are managed via Cerner's Medicaid deployment methodology including the use of eService, Cerner's online ticketing and record-keeping tool. eService utilizes web-based workflow to capture, prioritize and monitor requests.

DD098

The solution should have the ability to perform structural transformations against source data including, but not limited to:

The system includes out of the box standard transformations as well as configurable transformation capabilities. Standard transformations structure complex data from many sources into a highly reusable record. Standard transformations also facilitate the most common calculations and use cases.

Standard transformations begin with a structural data transformation process to get data into a common format and to map proprietary codes to industry-standard terminologies. This allows the HealtheIntent Platform to organize the data and align it to health care concepts as well as process it through the master person matching logic. The value of standardization and normalization technology becomes increasingly valuable as the number of data sources increases by allowing analysts to focus on unified terminologies rather than dozens of different ways each source stores the same concept.

In addition to Cerner's standard offering, our data set designer will enable DHHR to create custom transformations based on use cases. Data Set Designer supports a wide range of use cases including multistep transformations that may aggregate, filter, partition, reformat, execute logical rules and perform complex calculations. Complex logic is defined by the user based on the broad capabilities of SQL.



DD099 Summarization

The Platform will enable DHHR to complete summarizations by calculating counts, sums and other mathematical metrics by user-defined groups.

DD100 Partitioning

The Platform allows DHHR to group subsets of data, segregate data, and partition data as part of complex calculations. For example, we support the ability to partition multi-million row data by member id, service type to determine the first five physical therapy visits after inpatient surgery. DHHR will have the ability to define custom data sets to meet defined criteria.

DD101 Normalization

Cerner normalizes and transforms data into concepts so decision support, analytics, research, and new knowledge discovery can be achieved. The HealtheIntent Platform utilizes the latest, proven technologies to implement concepts such as data marts and big data. The platform has more than 32k concepts pre-loaded in the solution and ready for use. With our broad client base, our experience will provide DHHR access to new concepts as they are released into the Platform.

DD102 Consolidation

The Platform will enable DHHR to consolidate data to create population groups, identify cohorts, and more to complete further analysis. Transformations can persist these consolidations to promote reuse.

DD103 Filtering

Within HealtheAnalytics, SAP BusinessObjects and Tableau provide a visual drag-and-drop interface to support custom reporting. It allows users to create queries on the fly and introduce formulas and new variables to existing objects. Users can aggregate, filter, and group by desired elements and create visualizations including charts, maps, and interactive drill paths.

DD104 Derivation

The statistical analysis function helps users derive more insight from data and understand patterns and trends. HealtheDataLab is a data science technology that will expose normalized ingested data and process into pre-formatted, easy-to-use data models to support research, data science, and clinical intelligence initiatives. This advanced statistical analytics capability provides data in both identified and de-identified formats.

DD105 Others as defined by the Department

The Platform has a powerful processing capability that will provide DHHR with broadly flexibly applications to generate reports from both out of the box data sets and independently developed data sets based on DHHR's specific data needs. We understand that DHHR's business needs are ever-changing and will work with you to address those needs in good faith as those needs arise.

DD106 The solution should have the ability to provide a development environment in which the logic for slowly-changing entity relationships can be quickly and accurately written.

DHHR will have access to a configuration environment where content is created and validated. Whenever possible, we develop data approaches that automatically adjust as slowly changing dimensions evolve. For example, a member address is stored with effective dates identifying where members lived at various dates.



The solution should have the ability for authorized solution users to quickly and accurately write query logic for complex entity relationships.

Cerner supports debugging of queries via a graphical ad hoc report editor as well as technical SQL editor. Both workflows support complex entity relationships.

Our ad hoc report editor empowers users to drag and drop fields to define report fields, report filters and visualizations. Complex entity relationships are defined as part of the model and may include complex join paths and sophisticated calculations. These ad hoc models may be defined by Cerner or by authorized DHHR users. Once deployed, non-technical users leverage this data through an easy to use graphical interface.

More technical users may use SQL to define a query. The full SQL functionality is exposed, including the ability to aggregate, filter, partition, reformat, execute logical rules and perform complex calculations

DD108 The solution should have the ability to create interactive reports and maps.

Maps may be configured into any Tableau dashboard to not only display maps but also enable interactivity such as filtering all visuals on our dashboard to a certain geographic region. Likewise, users filter to an MCO, procedure type, or any other variable in a dashboard and the map will update to reflect that subgroup. In addition, our application enables geographic information systems (GIS) to perform complex geographic calculations such as geocoding based on addresses or calculating drive time distances between members and grocery stores.

DD109

The solution should have the ability to produce maps with both cartographic representation and global satellite imagery.

We support the ability to produce maps with cartographic representation through the embedded Tableau technology. Tableau is currently developing satellite imagery capabilities. Cerner is committed to updating Tableau regularly which will give DHHR access to the latest Tableau release at no additional costs.

DD110

The solution should have the ability to allow authorized solution users to create and/or select the type of map image they prefer to view, print or edit.

DHHR users will have the ability to create and/or select the type of map image they prefer to view, edit, or print. Our integration with Tableau includes the ability plot maps, calculate distances, calculate travel times, and produce analysis on distance travel and so much more.

DD111

The solution should have the ability to permit an authorized solution user to select and navigate information to be displayed on maps in a pop-up to highlight information about a location, including charts and graphs, photos, and other information as requested by the Department.

The HealtheIntent Platform leverages Tableau to enable authorized users to create full screen maps and dashboards with interactive charts and graphs with reference data, including photos. The maps will allow DHHR to analyze cohorts of members by location and monitor access to care by allowing the ability to measure drive times.

DD112

The solution should have the ability to resize and print all reports and maps within the solution.

Within the HealtheIntent Platform users resize and print all reports and maps within the solution. With our integration with Tableau we make this option simple for users.



The solution should have the ability to create and display legends, documentation, and data on reports and maps.

Cerner embeds Tableau within our analytics application to will enable DHHR users to create reports and maps with legends and plotted points. Common ways to display reference text include hover text, legends and text boxes. Maps are also highly configurable including drill down and interactive text. For example, an access to care map might make it clear that certain members are more than a 30-minute drive from a PCP. When the user hovers on that member, additional details may be displayed such as ED utilization and quality measures.

**DD114** 

The solution should support a query editor that provides editing, execution, and debugging functionality.

Cerner supports debugging of queries via a graphical ad hoc report editor as well as technical SQL editor. Both workflows support editing, execution and debugging.

The ad hoc report editor empowers users to drag and drop fields to define report fields, report filters and visualizations. Many query bugs are automatically prevented due to predefined joins, calculations and logic. Users are also able to preview query results as they build the query to correct and debug as they create a report.

More technical users may use SQL to define a query. SQL is entered via an editor that include auto complete and syntax highlighting to avoid SQL syntax mistakes. Queries may be run at any time to execute and debug as needed.

DD115

The solution should have the ability to access external plan data via the Application Programming Interface (API).

The HealtheIntent Platform and API management and governance practices allow organizations to easily interact with the HealtheIntent Platform. The Platform ingests data, including external plan data, from most source systems, in a variety of frequencies using an open API. The Platform will greatly expand for DHHR Medicaid member insights related to quality measurement, disease progression, and clinical/pharmacy utilization from the Medicaid population, program, eligibility, and plan level and drills down to the individual member level.

Cerner's APIs are well-defined and pre-designed features of our suite of applications and data can be pushed (ingested) into our solution's ingestion via APIs. For each data source, data extraction consulting services are utilized to assist in extracting and pushing data into the ingestion APIs.

DD116

The solution should provide a rules engine that utilizes technical call-level interface using the Application Programming Interface (API) standard.

The i2iLinks<sup>TM</sup> rules engine supports API calls to source system to extract data. Once extracted, the rules engine transfers that data to HealtheIntent via API calls as well. All ETL API calls are managed from i2iLinks<sup>TM</sup> so that the ETL process is executed accurately and on schedule via an automated process. In addition to ETL APIs, HealtheIntent supports a library of additional APIs related to data extract, environment management and other related scenarios.

DD117

The solution should have the ability to add, test, and implement new source-to-target mappings at the Department's request.

The HealtheIntent Platform will include all designated data, per the approved plan by the client. During the Data Integration event. Cerner will collaborate with the client and focus on the



current list of data sources and legacy reports, this will provide us with the starting point for discussion. Cerner will focus on data ingestion, data priority, data mapping, specification, and begin the process to vet the files. All source-to-target mappings will be configured and validated in accordance with the SDLC.

DD118

The solution should have an extract, transform, load (ETL) data acquisition component with a development environment that has the ability to build and deploy new source/target combinations within the solution.

Cerner's HealtheIntent Platform supports a SaaS software delivery model in which software is managed and licensed by Cerner on a pay-for-use basis, centrally hosted, on-demand, and common to all clients. Cerner provides the technology infrastructure, core network, servers, storage, and resources to support the entire Platform. The HealtheIntent Platform houses, maintains, and manages the HealtheIntent Platform that scales to meet the service levels and requirements of a best-in-class data foundation solution. We maximize the use of configuration and configurable technology to meet the business requirements of the MMIS environment.

Our offering includes the capability to define and test ETL content during DDI as well as operations and leverages a library of over 1000 ETL templates. During DDI, content is configured and tested in the configuration environment, promoted to the User Acceptance Testing (UAT) environment for client testing, and then promoted to the production environment. After the first release to production, ETL content will be maintained by Cerner via operations.

With our proposed Medicaid EDS, DHHR benefits from Cerner's breadth and depth of experience with over 173 public and private sector clients. As a SaaS offering, we continuously incorporate our learnings and experiences from working with all our clients back into our solution development efforts. Cerner extends these improvements and innovations back to our full client base through system enhancements and updated standard data models.

We have a proprietary data ingestion process as well as probabilistic algorithms structured to ensure all inbound disparate data is mapped to data models within the HealtheIntent Platform appropriately. This allows HealtheIntent applications to organize the data and align it to health care concepts as well as process it through the system's master person matching logic. The system normalizes and transforms the data into related concepts so that decision support, analytics, research, and new knowledge discovery can be achieved.

Several standard terminologies exist across the healthcare landscape. As our initial healthcare IT products entered the market in 1979, we quickly began to see the need for standardization and data governance to turn client data into actionable information. Over the past several decades, we have taken the "best of the best" terminologies from regulatory bodies to build a single vocabulary that easily translates across multiple terminology sets. Cerner Standard concepts, contexts and measures also consider the following industry quality organizations and initiatives:

- NQF- National Quality Forum
- PQRS- Physician Quality Reporting System
- ICSI- Institute for Clinical Systems Improvement
- ACC- American College of Cardiology
- WHO- World Health Organization
- USPSTF- US Preventive Services Task Force
- National Guideline Clearinghouse



- ADA- American Diabetes Association
- CDC- Centers for Disease Control
- American Academy of Family Physician's
- American Geriatric Society
- AAP- American Academy of Pediatrics
- Bright Futures
- AHA- American Heart Association
- ACC- Association of Corporate Counsel
- ACCF- Association of Corporate Counsel Formation
- AMA- American Medical Association
- AAFP- American Association of Family Physicians
- NHLBI- National Heart, Lung, Blood Institute

Our associate base includes a team of data experts, strategists, and clinical designers who establish Cerner standards for knowledge and terminology based on industry best practices. Our clinical team has reviewed each of the code sets, measures, quality standards or guiding principles published by the organizations listed above and identified the strengths of each. Included as part of our SaaS offering is an adaptable terminology that works well across a landscape where different terminologies have been used. Clients who utilize this standard terminology find they achieve a higher level of data integrity which directly increases the value of data used for analysis and decision making.

The HealtheIntent Platform provides a layer of standard ontologies, on top of the standard terminologies, which is extended on a use case basis. The ontologies provide the ability to define concepts as different collections of industry-standard codes. This enables the system to leverage standard terminologies while still maintaining the flexibility necessary to support a variety of use cases.

The Platform includes easy-to-use tools to modify existing data models and define new data models. Specific data models are flexible based on specific area, program, and population. This flexibility provides specific use case functionality and further configuration to support hybrid models to accomplish DHHR's data model goals and needs.

DD119

The solution should have an extract, transform, load (ETL) data acquisition component that supports automated impact analyses against the ETL code base.

Within the Cerner solution, when changes are made to reports or the ETL, the system automatically determines when the two are related and used by downstream processes so that impacts of changes are evaluated. Such information helps to guide design, configuration and validation (including regression testing).

DD120

The solution should have an extract, transform, load (ETL) data acquisition component that supports the versioning of ETL modules.

The Platform supports versioning to track releases and support reversion if necessary.

DD121

The solution should have an extract, transform, load (ETL) data acquisition component that has the ability to create ETL functions using pre-packaged transformation objects.

The HealtheIntent Platform has been very successful in completing this work with other clients and leverages that work to include pre-packaged transformation objects. The prepackaged objects include industry standard formats, such as X12 and CCDA, as well as various mappings



from other vendors or sources that are leveraged for clients. Ultimately, this culminates in a large library of over 1000 ETL modules that are used to increase quality and efficiency of the ELT process.

DD122

The solution should have an extract, transform, load (ETL) data acquisition component that has the ability to design, develop, and implement reusable ETL processes for transformation, exception/error handling, audit and control, and balancing.

The HealtheIntent Platform includes data quality monitoring. This consists of the system running checks automatically and manual capabilities to ensure the ETL data acquisition process is performed in a highly reliable manner. The system performs checks against incoming data sets to ensure that the data being sent from source systems is as expected. This includes macrolevel checking for things such timeliness or ensuring a data set is not empty down to field-level validations such as expected data type, i.e. text, numeric, etc. We also support the ability for more advanced checks against data set trends. The solution implements reusable ETL processes by offering more than 1000 different ETL templates to the client.

The system populates a status dashboard of incoming data sources that is monitored by the Cerner team. Should an issue with a source be found, the Cerner team will take steps to correct the issue and, if necessary, log the issue and alert the appropriate parties for further resolution. Any issues are tracked in our online issue tracking system, eService, through resolution. For more information regarding data quality monitoring, please refer to the Data Quality section of our response.

DD123

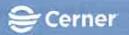
The solution should have an extract, transform, load (ETL) data acquisition component that has the ability to enter documentation from system level down to individual code line and includes a run-time debugger.

The HealtheIntent Platform is not coding from scratch but, rather, includes templates and an interface engine that has already been thoroughly validated used to complete much of the processing. The focus during the implementation is on the configuration changes necessary to localize the ETL process and specific data to DHHR's needs. During the validation process, in conjunction with data quality monitoring, the configurations are quickly modified to eliminate bugs. Cerner's data quality monitoring includes the necessary technology, processes, and staff to ensure incoming sources are designed and operating as expected. Please refer to the Data Quality section of our response for additional details regarding Cerner data quality monitoring.

DD124

The solution should have an extract, transform, load (ETL) data acquisition component that has the ability to provide automatic and manual caching control to balance quick response with scalability.

Unlike older technologies that rely on specific cache designs, Cerner leverages a database storage, which utilizes automated caching, columnar storage, and massively parallel processing (MPP) as an alternative and higher performing solution. Automated caching optimizes performance for common queries. Columnar storage improves performance by grouping data together by use rather than by row, which dramatically reduces disk I/O. Finally, MPP distributes processing across many servers to reduce query time by devoting more processing power per query.



The solution's extract, transform, load (ETL) data acquisition component should populate summarized, aggregated structures based on detail data changes in the timeframe of the detail refresh window using both set-based and procedural constructs.

The HealtheIntent Platform works with the state to determine when the data is acquired, onboarded, and taken through the processes, including loading and summarized derived values. Some examples of these include a library of quality measures, various risk scores and custom populations. As source data changes, all the derived values are updated as well.

DD126

The solution's extract, transform, load (ETL) data acquisition component should have the ability to acquire, transform, and load proportionally large data volumes to obtain the current volume of source data.

Data is loaded through an Extract, Transform, and Load (ETL) process that leverages Hadoop to process large data sets and then stores those results in database storage which is optimized for complex large queries. In 2019, the Platform has 173 clients, 1,130 unique data connections, managed data that covered 241 million lives and included 1,290 standard measures.

DD127

The solution's extract, transform, load (ETL) tool should have a data acquisition component that performs a timely data refresh from sources outlined in the Enterprise Data Solution (EDS) Request for Proposal (RFP) for each development phase indicated.

Within the Cerner solution, these mappings create a population record. The population record is a longitudinal record for the member that contains integrated data across the disparate sources. The population record goes through an Extract, Transform, and Load (ETL) process to move it from Hadoop to database storage. All completed in a timely manner, the platform takes raw data, transforms it to information and database storage then holds the information to allow analytics to create knowledge from this information. In 2019, the Platform has 173 clients, 1,130 data connections, managed data that covered 241 million lives and included 64 registries with 1,290 measures.

DD128

The solution's extract, transform, load (ETL) data acquisition component should populate internal analytics applications that are specifically required or proposed as part of the solution.

The HealtheIntent Platform is the core platform, including the ETL. The analytics applications, such as Tableau and BusinessObjects, are embedded third-party tools incorporated into the design of the Cerner solutions that creates a seamless experience for end-users.

DD129

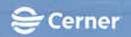
The solution's extract, transform, load (ETL) data acquisition component should have the ability for multiple authorized solution users to work on single or multiple tasks, reports, and/or projects concurrently.

The HealtheIntent Platform is designed for large groups of concurrent users. Some clients have over 50,000 users.

DD130

The solution's extract, transform, load (ETL) data acquisition component should support ease in promotion of code from one environment to another.

The HealtheIntent Platform offers an analytics content management mechanism to automate the movement of code from one environment to another.



The solution's extract, transform, load (ETL) data acquisition component should have the ability for high-speed movement of data between source and target systems located on the network.

The HealtheIntent Platform is experienced and accustomed to importing and exporting large volumes of data. For example, in 2019 the Platform had 1,130 data connections, managed data that covered 241 million lives and included 1,290 standard measures.

DD132

The solution's extract, transform, load (ETL) tool should have extraction functionalities that can unload, select, or filter data from source systems including the application of remote filters against the source.

As the extraction partner, the i2iLinksTM application will serve as the tool to extract, transform, and load, while in parallel, provide service able to unload, select and/or filter data or anything additional from the data source, including leveraging remote filters against the data source.

Cerner will assess the most efficient approach to extracting the data and complete documentation detailing data source location, timelines, formats and field and data location (tables, files, system, etc.). The team will compile that information to complete detailed data source to target mapping specifications, and operation routines and workflows that will enable the data to be refreshed, confirmed, and tracked, so the data made available to the end users is accurate and timely. We apply pertinent business logic at the ETL stage and will work with the source to ensure that business logic and use-case specifications are met on source data. However, all business logic will be applied to the source data post ingestion.

DD133

The solution's extract, transform, load (ETL) tool should have extraction functionalities that can deliver transparent, cross-platform access to remote data sources.

Within the Cerner HealtheIntent Platform, all sources loaded into the EDS is shared to various groups of users based upon the client's data governance model. The Cerner solution supports role-based access and group associations to control who has access to which data sources. When access is granted, the client can decide to grant it to specific reports, ad hoc reporting and/or SQL and API.

DD134

The solution's extract, transform, load (ETL) tool should have extraction functionalities that can efficiently process varying arrays and repeating groups.

The HealtheIntent Platform data extraction component has access to all data, including extracting large volumes and complex data relationships. Role-based security allows control to access the subsets of the data.

DD135

The solution's extract, transform, load (ETL) tool should have extraction functionalities that can receive data from a variety of source systems and formats of source data.

The HealtheIntent Platform stores, mines, analyzes, aggregates and visualizes large, complex structured, semi-structured, and unstructured text data from most source systems. Cerner's proven offering is in use today by more than 200 public and private sector clients. During automated processing, data is standardized, quantified, and combined across DHHR's data sources and relevant open source data. This allows DHHR to quickly identify patterns that exist across different types and sources of data.

For datasets external to the platform, our approach is to accept transactions and messages in various formats, including, but not limited to, HL7, XML, EDI, and CSV flat files through the DHHR. We provide the processing of a client's set of data sources as a service. While our proposed offering includes data quality monitoring, in the event we cannot resolve an issue, we



will contact DHHR. Source data goes through a structured process where it is mapped to data models within the solution. This allows the solution to organize the data and align it to health care concepts as well as process it through the master person matching logic. The platform takes raw data, transforms it to information, and data storage holds the information to allow analytics to create knowledge from this information.

DD136

The solution's extract, transform, load (ETL) tool should have data checks and edit procedures in response to data quality issues identified in source systems and internal analytics applications.

The HealtheIntent Platform includes Data Quality Monitoring which includes the technology and services to ensure the ETL data acquisition process is performed in a highly reliable manner and the performance is automatic. The system performs checks against incoming data sets to ensure that the data sent from source systems is as expected. This includes macro-level checking for things such timeliness or ensuring a data set is not empty down to field-level validations such as expected data type, i.e. text, numeric, etc. We also support the ability for more advanced checks against data set trends and offer over 1000 different ETL templated to the client.

For example, the system determines if a data set that historically includes both male and female values is sent with only male values. The system populates a status dashboard of incoming data sources that is monitored by the Cerner team. Should an issue with a source be found, the Cerner team will take steps to correct the issue and, if necessary, log the issue and alert the appropriate parties for further resolution. Any issues are tracked in our online issue tracking system, eService, through resolution. For more information regarding our Data Quality Monitoring capabilities, please refer to the Data Quality section of this Attachment.

DD137

The solution's extract, transform, load (ETL) tool should have the ability to perform both setbased and procedural checks and edit procedures based on the Department's data quality objectives.

The HealtheIntent Platform includes our Data Quality Monitoring capabilities which consists of both automated and manual features to ensure the ETL data acquisition process is performed in a highly reliable manner. The system performs checks against incoming data sets to ensure that the data being sent from source systems is as expected. This includes macro-level checking for things such timeliness or ensuring a data set is not empty down to field-level validations such as expected data type, i.e. text, numeric, etc. We also support the ability for more advanced checks against data set trends.

For example, the system determines if a data set that historically includes both male and female values is sent with only male values. The system populates a status dashboard of incoming data sources that is monitored by the Cerner team. Should an issue with a source be found, the Cerner team will take steps to correct the issue and, if necessary, log the issue and alert the appropriate parties for further resolution. Any issues are tracked in our online issue tracking system, eService, through resolution. For more information regarding our Data Quality Monitoring capabilities, please refer to the Data Quality section of this Attachment.

DD138

The solution's extract, transform, load (ETL) tool should have the ability to perform all demographic field check and edit procedures.

Using Data Quality Monitoring, we detect errors in the data that are likely data quality issues and Cerner's Master Person Matching will assist in reconciling and differences in the relationship between data sources.



The solution's extract, transform, load (ETL) tool should have the ability to apply complex data mapping and domain value conversions against source data.

Cerner has the tools and experience that has loaded approximately 1,130 unique data connections. These mappings are often complex and configured by Cerner technical and terminology experts

Integration Architects: Integration architects are experts in the process of extracting loading and transforming data. They execute a set of services to gather, map and validate data. Mapping may be simple 1:1 relationships or complex logic with looping, logic and mathematical evaluation.

Medical Laboratory Scientists, Registered Nurses, PharmDs, Pharmacy Technicians: As DHHR leverages non-traditional data sources, these sources are likely to have high use of proprietary terms. For example, 48% of immunization records and 84% of laboratory results contain proprietary codes. Cerner leverages terminology experts to map these proprietary terms to industry standards which greatly simplifies analytics.

DD140

The solution's extract, transform, load (ETL) tool should have the ability to perform an initial one-time data load from sources outlined in the Enterprise Data Solution (EDS) Request for Proposal (RFP) for each indicated development environment.

As part of DDI, the Cerner solution will complete a historical data load in each specific environment.

DD141

The solution's extract, transform, load (ETL) tool should have the ability to geocode subject area addresses.

Through Geographic Information System, the Cerner solution will take a street address and convert it to latitude and longitude. Once converted, that data is utilized in various reports and to drive more complex information, such as if there is a primary care physician within a 30-minute drive time from the member's location.

DD142

The solution's extract, transform, load (ETL) tool should have the ability for high-speed movement of data between source and target systems on the network.

The HealtheIntent Platform is experienced and accustomed to importing and exporting large volumes of data. For example, in 2019 the Platform had 1,130 data connections, managed data that covered 241 million lives and included 1,290 standard measures.

DD143

The solution's extract, transform, load (ETL) tool should have the ability to efficiently load proportionally large data volumes.

The HealtheIntent Platform is designed to manage large, rapidly expanding volumes of data and provide extremely fast query performance for data warehouses and other query intensive application. It is constantly monitored for CPU, memory, and storage capacity and performance which allows us to stay ahead of resource demands. If these resource demands are more than the current trend, the cloud operations team add the appropriate system resources without a downtime.

The HealtheIntent Platform's underlying infrastructure allows for rapid scalability, both in terms of storage and processing. The technologies are proven, reliable and field-tested with 241 million lives covered worldwide. Cerner has rapidly increased the data variety, scale, and intelligence capacities that the HealtheIntent Platform supports.



The solution's extract, transform, load (ETL) tool should have the ability to schedule and monitor transformation jobs/sessions to populate internal analytics applications.

As part of operations, the Cerner team will monitor transformation jobs to make sure they process as scheduled.

DD145

The solution's extract, transform, load (ETL) tool should have the ability to create complex job streams with interdependencies.

The HealtheIntent Platform's Data Set Designer offers a graphical tool to set up jobs and series of jobs that have complex dependencies. For example, surgical care data is gathered from a pre-surgical and post-surgical perspective in different venues and with details stored in different systems. A series of jobs can set up to aggregate the data and drive very specific details pertaining to the timing of the surgical activities and if they are appropriate to the client's best practices.

DD146

The solution's extract, transform, load (ETL) tool should have the ability to re-route error or exception records to a separate target for future interrogation.

The HealtheIntent Platform includes our Data Quality Monitoring capabilities. These capabilities consist of both automated and manual features to ensure the ETL data acquisition process is performed in a highly reliable manner. The system performs checks against incoming data sets to ensure that the data sent from source systems is as expected. This includes macro-level checking for things such timeliness or ensuring a data set is not empty down to field-level validations such as expected data type, i.e. text, numeric, etc. We also support the ability for more advanced checks against data set trends.

For example, the system determines if a data set that historically includes both male and female values is sent with only male values. The system populates a status dashboard of incoming data sources that is monitored by the Cerner team. Should an issue with a source be found, the Cerner team will take steps to correct the issue and, if necessary, log the issue and alert the appropriate parties for further resolution. Any issues are tracked in our online issue tracking system, eService, through resolution. For more information regarding our Data Quality Monitoring capabilities, please refer to the Data Quality section of this Attachment.

DD147

The solution's extract, transform, load (ETL) tool should have the ability to correct data and subsequently re-submit corrected data to the ETL process.

The HealtheIntent Platform provides the capability to identify, correct, and report data quality issues including data redundancy, incorrect values, missing values, and inconsistent values of the data sources, and to continually monitor the quality of the data extracted

DD148

The solution's extract, transform, load (ETL) tool should have the ability to reports results of an ETL session, including automatic notification of normal processing and failures, descriptions, and counts of exceptions.

The proposed offering includes data quality monitoring. The system automatically records details of each uploaded data set and the result of its associated ETL session. The Cerner team monitors and evaluates these ETL session result records and reports the results to DHHR through routine DDI and operations deliverables. The deliverable outlines the result of each ETL session, including information about the uploaded data set, if the system encountered errors during the ETL process, and the action taken, if any, to resolve any errors that occurred organized by source system. If the Cerner team finds an issue with an upload, the Cerner team will resolve the issue or engage additional Cerner support and DHHR, as needed. The



deliverable includes any information DHHR needs to access associated Service Requests, should they exist.

DD149

The solution's extract, transform, load (ETL) tool should have the ability to generate and manage notifications and alerts, including how the alerts are registered, logged, and to whom they were posted.

The proposed offering includes data quality monitoring. The system automatically records details of each uploaded data set and the result of each ETL session. The Cerner team monitors and evaluates these ETL session result records as a routine part of data quality monitoring. Should the Cerner team find an issue with an upload, they will work to resolve the issue. The Cerner team tracks all issues within Cerner's internal issue tracking system. DHHR has access to this online ticketing and record keeping system through an eService portal. This portal provides a location where clients research issues and identify potential resolutions documented by our service organization online. Clients may also submit and manage their Service Requests online and search a database of code changes for issues identified by other client organizations.

DD150

The solution's extract, transform, load (ETL) tool should have the ability to tune ETL process steps.

The HealtheIntent Platform is highly configurable to tune the ETL process steps and utilize big data technology to minimize performance based upon tuning, while still offering flexibility.

DD151

The solution's extract, transform, load (ETL) tool should have the ability to load-balance ETL jobs or process steps.

Automatic load balancing ensures ETL job stability and that ETL jobs do not degrade query performance. Part of this balancing is based on a separate Hadoop instance which is isolated from the database storage to solely focus on data processing. That separation ensures that the impact of the ETL on the database storage is minimized. The database storage ETL load is also controlled with automatic balancing that prioritizes end user workflows over ETL processing to minimize impact to users.

DD152

The solution's extract, transform, load (ETL) tool should have the ability to recover from the abnormal ending of a job and restart or rollback.

The HealtheIntent Platform ETL's process includes atomic steps in the instance that if something should go wrong, no data is committed and a reprocess is initiated to ensure DHHR does not find themselves in a state where they have partially processed job in production.

DD153

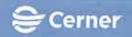
The solution's extract, transform, load (ETL) tool should have the ability to create complex job schedules with both serial and parallel streams.

The Platform's ETL tool creates complex jobs, including both serial and parallel streams. For example, HIE and EHR data may all be loaded in parallel, however there may be a dependent job that takes that data and ascertains which members got emergency care last week.

DD154

The solution's extract, transform, load (ETL) tool should have the ability to initiate jobs based on time or occurrence of events.

While most jobs are based upon scheduling, the Cerner solution trigger based upon a schedule or certain conditions.



The solution's extract, transform, load (ETL) tool should have the ability to create log files that are detailed enough to debug issues.

The HealtheIntent Platform offers extensive logging pertaining to both user interaction and data processing that is queried to identify trends or debug issues.

DD156

The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, including source definitions.

The HealtheIntent Platform stores extensive metadata on reports, ad hoc reports and ETL jobs that are viewable, reportable and exportable. Metadata is generated and stored as a byproduct of using the Cerner solution. The data is searchable, able to have reports created based upon the data, import and export the data via API's, and automated and supplemental document is applied.

DD157

The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, including target definitions.

The HealtheIntent Platform stores the source and target information in the same location and stores extensive metadata on reports, ad hoc reports and ETL jobs that are viewable, reportable and exportable. Metadata is generated and stored as a byproduct of using the Cerner solution. The data is searchable, able to have reports created based upon the data, import and export the data via API's, and automated and supplemental document is applied.

The HealtheIntent Platform offers proven methodologies for metadata that are aligned to the Data Management Plan to ensure accurate and complete definitions and descriptions of all data contained within our solution and the relationships between the data. Companion metadata files are uploaded and stored with each source file and contain metadata about the source file. The metadata includes field-specific details as well as overall details like calculations, data aggregations, and filtering.

With each new source system that is onboarded to the HealtheIntent Platform, Cerner will work with DHHR to gain an understanding of the data in the source system. Cerner and DHHR will work together to determine the business rules for the data; how that data will be used within the EDS to support various analytics and reports.

Once the business rules for the data are determined during data discovery, Cerner assesses the most efficient approach to extracting the data and completes documentation detailing data source location, timelines, formats, and field and data location (tables, files, system, etc.). The Cerner team compiles that information to complete detailed data source-to-target mapping specifications, operation routines, and workflows that will enable the data to be refreshed, confirmed, and tracked so the data made available to the end users is accurate and timely.

Cerner provides each client a Project Portal that houses the system specification documents specific to their implementation as data sources are onboarded. Metadata includes detailed documents stored in the designated DHHR Project Portal as well as details directly embedded in the analytics application. These technologies will be implemented as part of DDI. All Cerner projects will update these documents as changes are made.

Specific details stored in the metadata repository include:



- Data processing: source system, latency, transformations, source-to-target mapping, calculations, etc.
- Standards: Cerner-maintained reference data for industry standard terminologies (CPT, ICD, SNOMED etc.) as well as calculation standards (HEDIS, CPC+, Cerner-defined measure library, etc.)
- Metadata from source systems: propriety codes, update policy, source data expert, etc.
- Metadata related to data models: model calculations, terminology related to use case, etc.
- Versioning is included for all documents

The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, including database mapping(s).

Upon ingestion of a new data set, the system records metadata about the data set and stores the metadata and the raw data set in the database. This includes any updated mappings generated through the ingestion and transformation process. The HealtheIntent Platform stores extensive metadata on reports, ad hoc reports, and ETL sessions that are viewable, reportable and exportable. Metadata is generated and stored as a byproduct of using the Cerner solution. The data is searchable, able to have reports created based upon the data, import and export the data via API's, and automated and supplemental document is applied.

DD159

The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, including data lineage.

Cerner's approach to data lineage is supported by process and technology. The Data Management Plan prescribes the process and model for data governance while system views and reports allow system administrators and users to understand, at a table and field level, the origin of a data element and its relation to the other data elements in a data set, inclusive of transformations which it may have undergone. Data is generated and stored as a byproduct of using the Cerner solution. The data is searchable, able to have reports created based upon the data, import and export the data via API's, and automated and supplemental document is applied.

Cerner's approach to data lineage is supported by process and technology. We will align metadata management practices to DHHR's Data Management Plan to ensure accurate and complete definitions and descriptions of the data and the relationships between all data contained within the proposed solution The Data Management Plan prescribes the process and model for data governance while system views and reports allow system administrators and users to understand, directly within their workflow, the origin of a data element and its relation to the other data elements in a data set, inclusive of transformations which it may have undergone.

Cerner has extensive experience maintaining metadata across our 173 HealtheIntent Platform clients. That experience includes millions of files from a wide variety of source systems and standard metadata documentation for each source. This experience allows us to continuously refine our SaaS reports and data models, which embed relevant detail directly within the end user's workflow.

The process of developing the data dictionary begins by gathering metadata from source systems regardless of the format and storing the metadata in its raw format. Data is then aggregated into a centralized data dictionary and data source documentation. As



transformations are added to the Platform, the standard documents are extended to facilitate data lineage. These documents have a standard format, which allows users to search across all sources and all transformations to locate data and related details.

Companion metadata files are uploaded with each source file containing metadata about the source file. The metadata includes field-specific details as well as overall details like calculations, data aggregations, and filtering. This includes, but is not limited to:

- Human-readable (plain English) field name
- Field description
- Database field name
- Database table name
- Field data type
- Field length
- Valid values associated with the field
- Description of each valid value.

The system exposes the most commonly used details directly in the application to promote ease of use and support generation of additional data models unique to DHHR's implementation. Properly credentialed users view and create new metadata and new data models within the HealtheIntent Platform using the embedded build tools. Depending on the application and the knowledge level of the end user, this may be through queries executed using SQL or, for less technical users, in the form of system tools presented in a GUI format. This ability to create new metadata and new data models facilitates tailoring the reports and data views to specific DHHR use cases. The system includes auditing capabilities to track user activity and data model changes inclusive of creating new data models.

Cerner publishes the HealtheIntent Platform's core data model, inclusive of the underlying data dictionaries, through system specification documents as well as online in Cerner's reference pages. All Cerner projects will update these documents as changes are made. The data model also includes reference data, or mappings of third-party content standards and nomenclatures. Reference data includes industry standards for both computing and clinical nomenclatures and protocols. As standards bodies update their standards, Cerner updates the HealtheIntent Platform's data model and publishes the updated code sets and associated documentation to clients on a regular basis through system updates. Online documentation is searchable and may be exported in PDF format for offline use.

DD160

The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, including transformations.

The HealtheIntent Platform configures every transformation within the system, including a full metadata trail on the characteristics of that transformation. These characteristics include insert, update, delete, calculation, join paths, format transformation, etc. Those details are viewable within the application and for summary reporting. Data is generated and stored as a byproduct of using the Cerner solution. The data is searchable, able to have reports created based upon the data, import and export the data via API's, and automated and supplemental document is applied.



The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, including data dependency analysis.

Based upon the metadata related to loading and transforming data in the system, the Cerner solution provides processes that trace data dependencies so when content changes, it is well understood the impact of that content change regarding what data in reports are impacted. This information is viewed in several different ways and is primarily utilized for troubleshooting and evaluation of impact of any change of the system. Data is generated and stored as a byproduct of using the Cerner solution. The data is searchable, able to have reports created based upon the data, import and export the data via API's, and automated and supplemental document is applied.

DD162

The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, including process flows.

Based upon the metadata related to loading and transforming data in the system, the Cerner solution provides processes that trace both the dependencies of data processing and the steps that make up the process flow, so that when content changes, it is well understood the impact of that content change regarding what data in reports are impacted. This information is viewed in several different ways and is primarily utilized for troubleshooting and evaluation of impact of any change of the system. Data is generated and stored as a byproduct of using the Cerner solution. The data is searchable, able to have reports created based upon the data, import and export the data via API's, and automated and supplemental document is applied.

DD163

The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, including operational statistics.

The HealtheIntent Platform's workflow monitoring leverages data about the execution of the various ETL steps, including successful completion and other related statistics. This monitoring is primarily utilized to identify any errors that may occasionally occur and quickly resolve the errors.

DD164

The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, and store metadata in an open format.

The HealtheIntent Platform captures metadata through the application and is viewable within the application as well as through SQL. Data may be imported or exported via the open API.

DD165

The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that versions the stored metadata content.

Our response addresses the requirement for an ETL managed metadata environment as it is our interpretation that a mobility management entity is not applicable to the ETL process. Should our interpretation be incorrect, we respectfully request an opportunity to provide an updated response based on the Department's clarification of this term.

Cerner's proposed applications support your goal for a well-planned and well-executed managed metadata environment strategy. Cerner has extensive experience in managing the metadata of our 173 clients on the Platform. We will align metadata management practices to DHHR's Data Management Plan to ensure accurate and complete definitions and descriptions of the data and the relationships between all data contained within the proposed solution. The



Data Management Plan prescribes the process and model for data governance while system specifications documentation and system views and reports allow system administrators and users to understand the origin of a data and its relation to the other data in the system, inclusive of transformations it may have undergone.

The system supports a record of updates to metadata.

**DD166** 

The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that includes the technical infrastructure to capture, store, and report the various forms of metadata.

Our response addresses the requirement for the solution to have an ETL managed metadata environment as it is our interpretation that a mobility management entity is not applicable to the ETL process. Should our interpretation be incorrect, we respectfully request an opportunity to provide an updated response based on the Department's clarification of this term.

Upon ingestion of a new data set, the system records metadata about the data set and stores the metadata and the raw data set in the database. This includes any updated mappings generated through the extract, transform and load process. The HealtheIntent Platform stores extensive metadata on reports, ad hoc reports, and ETL sessions appropriately credentialed users view, leverage in reports, and export. Metadata is generated and stored as a byproduct of using the Cerner solution.

DD167

The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that accommodates a sufficient, as defined by the Department, volume of metadata content for the proposed solution.

Our response addresses the requirement for the solution to have an ETL managed metadata environment as it is our interpretation a mobility management entity is not applicable to the ETL process. Should our interpretation be incorrect, we respectfully request an opportunity to provide an updated response based on the Department's clarification of this term.

Cerner has extensive experience maintaining metadata across our 173 HealtheIntent Platform clients. This experience includes millions of files from a wide variety of source systems and standard metadata documentation for each source. Our experience allows us to continuously refine our SaaS reports and data models, which embed relevant detail directly within the end user's workflow.

The standard metadata stored for any source system includes field-specific details as well as overall details like calculations, data aggregations, and filtering. This includes, but is not limited to:

- Human-readable (plain English) field name
- Field description
- Database field name
- Database table name
- Field data type
- Field length
- Valid values associated with the field
- Description of each valid value.



We will work in good faith with DHHR to store and maintain a volume of metadata content that is sufficient to accommodate the requirements of this RFP.

**DD168** 

The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that accommodates, at a minimum:

Our response addresses the requirement for the solution to have an ETL managed metadata environment as it is our interpretation that a mobility management entity is not applicable to the ETL process. Should our interpretation be incorrect, we respectfully request an opportunity to provide an updated response based on the Department's clarification of this term.

Cerner's HealtheIntent Platform supports a SaaS software delivery model in which software is managed and licensed by Cerner on a pay-for-use basis, centrally hosted, on-demand, and common to all clients. Cerner provides the technology infrastructure, core network, servers, storage, and resources to support the entire Platform. This includes everything from the costs and procurement of sub-licensed software, hardware, storage, and internal networking to the ongoing responsibility of ensuring all applications continue to meet the infrastructure requirements Cerner's clients require. Cerner's HealtheIntent Platform, technology infrastructure is located within an AWS data center, using infrastructure as a service (laaS). AWS data centers provide on-demand delivery of compute power, database storage, applications, and other IT resources via the internet to operate Cerner-hosted systems. Since Cerner uses both a SaaS and laaS in our delivery model, we provide a combination of physical and virtual access to appropriate system applications specific to the Department's requirements. Our cloud operations team maintains a threshold of the system resources that host the data and the solution through the life of the contract. If the resources, CPU, memory, or data storage exceed a predefined threshold, the cloud operations team will automatically add more resources, as needed. Cerner's solution is sufficiently flexible to adapt and change without disruption to clients and their associated contributors of data. Cloud-based computing enables computing capacity on demand. Systems are scaled out instead of scaled up, and the existing domain configuration is reused across environments.

DD169 75 active users

The Cerner solution has the ability for over 50,000 users to access and work within the constructs of the solution.

DD170 40 concurrent users

The HealtheIntent Platform has the ability for over 50,000 users to access and work concurrently within the constructs of the solution.

DD171

Allows for 10% growth per year spread across all user levels

The HealtheIntent Platform allows for growth that allows for over 50,000 users to access and work within the constructs of the solution.

**DD172** 

The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that has the ability to capture and synchronize metadata.

The HealtheIntent Platform supports a hybrid metadata management approach that support data capture and synchronization via application workflows as well as via the ETL technology. This approach supports automation when possible while also supporting the more common capture via DDI and operations services.



Typically, a large amount of metadata is loaded when onboarding a source and that data may be augmented at any frequency. For example, metadata pertaining to source type, source transfer frequency and data format are loaded during on boarding. That data is commonly augmented daily with details that assist with data validation such as a balance file listing data volumes and other details that are used to match metadata to activity files which validates file completeness.

Our response addresses the requirement for the solution to have an ETL managed metadata environment as it is our interpretation that a mobility management entity is not applicable to the ETL process. Should our interpretation be incorrect, we respectfully request an opportunity to provide an updated response based on the Department's clarification of this term.

DD173

The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that provides wild card (SQL-LIKE), keyword- and attribute-based search abilities to locate the required metadata.

All metadata loaded via ETL and most metadata entered via the application is stored in the database. That data is accessible in three ways:

- SQL including LIKE and attribute-based commands. SQL logic is highly complex to search for specific metadata
- 2. A non-technical search box that allows users to search for reports, ad hoc models, transformations and other content based on metadata.
- The system exposes the most commonly used details directly in the application to promote ease of use and support generation of additional data models unique to DHHR's implementation.

Embedded details align with MITA by providing context-sensitive assistance specific to the desired function.

DD174

The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that provides a central interface to manage and maintain the MME.

All metadata entered either via the ETL as well as most metadata entered via the application is accessed via the centralized HealtheEDW application. This application supports the loading, updating and access to metadata. As an embedded application of the Cerner solution, metadata is collected and updated efficiently within the corresponding configuration workflow which improves metadata quality and efficiency. This centralized approach also enables metadata to be shared with data analysts.

DD175

The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that has an extraction capability to allow metadata to be exported and distributed in open and non-proprietary formats by authorized solution users.

Metadata, like all other data stored in the system, may be exported and distributed via the standard export options:

Exported via report: ideal export for formatted output including graphical capabilities.
 Common formats include Excel, Word, Text, Comma-Separated Value (CSV), Delimited Text, Portable Document Format (PDF) and Joint Photographic Expert Group (JPEG).



- 2. Exported via SQL query: ideal export when ad hoc complex SQL logic is needed. Data is typically exported via CSV
- 3. Exported via Data Syndication API: ideal export when API access or very large data volumes are required (e.g. 100+ trillion rows)

All options include non-proprietary extract options with the options to configure the extract contents and format.

DD176

The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that provides a relational database repository for persistent storage of metadata content (if centralized) or for registry (if decentralized approach).

All metadata loaded via ETL and most metadata entered via the application is stored in the database storage. Metadata is accessible via applications, reports, and SQL and API interfaces.

DD177

The solution should provide a Database Management System and support physical database administration.

As part of its SaaS offering, Cerner provides all hardware, including a physical database and its associated administration. We serve over 173 clients and provide 24/7 technical support. As of 2019, the Platform maintained 1,130 data connections representing 241 million lives and 64 registries with 1,290 measures.

**DD178** 

The solution should provide a Database Management System that maintains all databases used in the proposed solution including, but not limited to:

As part of its SaaS offering, Cerner provides all hardware, including a physical database and its associated administration. The Cerner solution regularly monitors and installs for 173 clients. In a SaaS environment, Cerner's database software remains on standby to be allocated to clients as it is needed, thus eliminating long delayed needs to purchase and deploy hardware.

DD179

Installation

As described above, Cerner provides all hardware, including a physical database and its associated administration.

DD180

Configuration

As part of the SaaS offering, the Cerner solution provides all hardware, including a physical database and its associated administration. Cerner provides 24/7 technical support on stand-by. In 2019 the Platform had 1,130 data connections, managed data that covered 241 million lives and included 64 registries with 1,290 measures.

DD181

Updates

Currently, our regularly scheduled updates run every two weeks. All updates are validated via a full SDLC process to ensure passivity. Our cloud-based architecture allows for these releases to be deployed to all clients at the same time. Our major releases contain significant user interface updates, major capabilities, and technology upgrades, and follow a cycle of bi-annual major content releases. Release notes are posted to a Release Note Wiki, communicated via our collaboration group, as well as shared with the consulting team.

Infrastructure, software, and application upgrades/updates are evaluated based upon Cerner's Risk and Risk Matrix policy to evaluate the severity and impact of the change and the likelihood



of risk to the Platform. Based on our highly available redundant system architecture, releases of new code typically do not require downtime. Cerner's scheduled maintenance for routine infrastructure updates is performed monthly, during off-peak business hours, to reduce potential end user impact.

## DD182

Patch fixes

Cerner obtains up-to-date patch notification through its partner relationships and tests patches using various processes prior to applying the patches within the applicable Platforms.

Cerner conducts continuous production scanning of Cerner's Platforms. Cerner scores vulnerabilities based upon the expected impact to the environment and external exposure. Once the vulnerability is scored, a process to mitigate or remediate the vulnerability is initiated.

Identified vulnerabilities are assessed for risk and mitigated or remediated according to their severity level. This analysis includes using industry standards, such as NIST's common vulnerability scoring system (NIST CVSS), and by internal penetration scanning of environments using industry standard tools. Cerner strives to patch vulnerabilities within the timeframes set forth below:

- Urgent two weeks if an approved work around method is available or 48 hours when no associated workaround is available
- Critical 30 days
- High 90 days
- Medium 180 days
- Low 365 days

As part of our Software as a Service model, Cerner manages all patch updates/fixes.

## DD183

The solution should provide a Database Management System that provides day-to-day database operational support

The Cerner solution's Enterprise Technology Services (ETS) constantly monitor database functionality. Our hosting teams manage approximately 173 clients in our SaaS platform in a variety of global locations. They maintain up-to-date professional training and certifications including, CISSP, CISM, CISA, CGEIT, PCI-DSS, ITIL® and multiple SANS certifications. In combination with AWS, we do not see any limits in our day to day database operational support as we are constantly monitoring the system 24/7.

## DD184

The solution should provide a Database Management System that identifies and resolves problems/issues.

The Cerner solution's Enterprise Technology Services (ETS) are constantly monitoring to ensure the database is functioning and, if necessary, is identifying and resolving any problems or issues.

## DD185

The solution should provide a Database Management System that can define and activate new environments.

Cerner will set up the Configuration, UAT, Production, and Training/deidentified environments as part of the initial phase of DDI. Because Cerner offers a SaaS approach, hardware is already up and running. A portion of the hardware, a tenancy, merely needs to be allocated to DHHR.



The solution should provide a Database Management System that monitors and synchronizes such that all environments operate efficiently, and data quality and validation is ensured with additional indexing as needed.

Each environment within the Cerner solution is supported by the same hardware capabilities and fast performance. Unlike older technologies that rely on specific index designs, Cerner leverages a database storage, which utilizes automated caching, columnar storage, and massively parallel processing (MPP) as an alternative and higher performing solution. Automated caching optimizes performance for common queries. Columnar storage improves performance by grouping data together by use rather than by row which dramatically reduces disk I/O. Finally, MPP distributes processing across many servers to reduce query time by devoting more processing power per query.

In addition to inherent database storage advantages, the DDI and operations teams, as well as authorized client users, define projections which streamline system performance for unique highly complex client use cases.

**DD187** 

The solution should provide a Database Management System that runs on open systems platforms.

Cerner is committed to evaluating new technology and incorporating those technologies into the platform at no additional cost. For security and performance reasons, users access the system via the user interface or APIs rather than direct access to the hardware.

DD188

The solution should provide a Database Management System that has all related cache entries on a single cache partition.

With our proposed cloud offering, Cerner will provide the necessary configuration to meet performance and availability targets. Unlike older technologies that rely on specific cache designs, Cerner leverages a database storage, which utilizes automated caching, columnar storage, and massively parallel processing (MPP) as an alternative and higher performing solution. Automated caching optimizes performance for common queries. Columnar storage improves performance by grouping data together by use rather than by row, which dramatically reduces disk I/O. Finally, MPP distributes processing across many servers to reduce query time by devoting more processing power per query.

Cerner continually reviews the latest technologies that enhance the functionality, stability, and performance of our cloud applications. With the flexibility of the cloud, Cerner will change or integrate new infrastructure without disruptions to end users. The Department will benefit from these enhancements throughout the life of the contract.

DD189

The solution should provide a Database Management System that supports at a minimum Extensible Markup Language (XML).

The Cerner solution supports common XML imports and exports and leverages a flat file format for large amounts of data that is converted to XML and other formats as needed.

DD190

The Vendor should assess the Department's reporting needs to inform development of reporting and dashboarding abilities in support of the Department.

Our team will make recommendations for reporting based on Cerner's library of standard reports and needs for new templates considering the unique requirements of DHHR. Our large client base continues to add to this library, and we will take steps to identify additional cutting-edge standard content from the library that would be applicable to West Virginia use cases. For example, a recent homelessness solution identifies the top utilizers of social services across the



state and identifies the risk of housing instability for Medicaid members. Criminal justice, temporary housing shelter data, hospital data, Medicaid eligibility and claims data all contribute to define the risk of housing and stability of Medicaid. Based on this information, a risk score is given to care managers to interact with the highest risk individuals and prevent negative outcomes.

**DD191** 

The solution should have the ability to export data and query results directly from the solution into the user-specified format including, but not limited to:

To support data query and export, the HealtheIntent Platform integrates BusinessObjects, Tableau, proprietary APIs, and technical user interfaces. These technologies support the export of data to, Excel, Word, Access, Text, CSV, Delimited Text, PDF and JPEG.

DD192

Excel

Data and query results is extracted from the Platform by authorized users in various forms, including Excel. The user then forwards these files as needed.

DD193

Word

Data and query results is extracted from the Platform by authorized users in various forms, including Word, and these files are forwarded by the user as needed.

**DD194** 

Hyper Text Markup Language (HTML)

Cerner's solution is web based including the ability to embed reports in non-Cerner websites. These embedded reports are not only formatted properly but also allow the user to interact with the data. E.g. filtering results, drilling to detail, etc.

**DD195** 

Access

The HealtheIntent Platform commonly exports data to the Access application via a flat file format. Flat files are easily ingested by Access.

DD196

Software and Services (SAS)

Cerner includes industry standard extract formats as well as highly configurable flat file extract formats. The majority of third-party applications are compatible with at least one of these formats. These formats are commonly used with statistical tools such as SAS and open source data science tools. The solution also includes built in data science tools known as HealtheDataLab.

DD197

Graphical User Interface (GUI)

The HealtheIntent Platform exploits the full functionality of Tableau, BusinessObjects and HealtheAnalytics. End-users view all data in GUIs to explore information in greater detail and clarity.

DD198

Extensible Markup Language (XML)

The HealtheIntent Platform supports query results in XML and other standard extracts, as mentioned above.

DD199

Application Programming Interface (API)

Data and query results are extracted in Cerner-specified formats via a Data Syndication API. Data syndication facilitates the bulk delivery of the HealtheIntent Platform data. It provides



direct, low-level, asynchronous access to the information that HealtheIntent applications create, curate, and operate against.

DD200 Text

The HealtheIntent Platform very commonly extracts data via text. This format is most used to extract large volumes of data, i.e. hundreds of millions of rows or more of data.

DD201 Comma-Separated Value (CSV)

The HealtheIntent Platform extracts data via CSV. This format is most used to extract large volumes of data, i.e. hundreds of millions of rows or more of data.

DD202 Delimited text

The HealtheIntent Platform extracts data via delimited text. This format is frequently used to extract large volumes of data (i.e., hundreds of millions of rows or more).

DD203 Portable Document Format (PDF)

Data and query results are extracted from the Platform by authorized users in various forms, including PDF, and these files are then forwarded by the user as needed.

DD204 Joint Photographic Experts Group (JPEG)

Cerner's solution supports extracting data into a JPEG image.

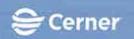
DD205 Others as requested by the Department

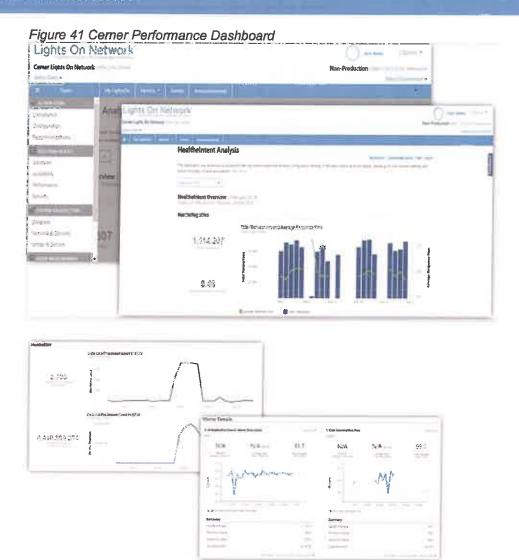
Cerner is constantly updating their technology to utilize the latest and greatest technology. As SaaS technology evolves, the client will receive those enhancements.

DD206 The solution should have the ability to provide dashboards specific to Service Level Agreements (SLA) and Key Performance Indicators (KPI).

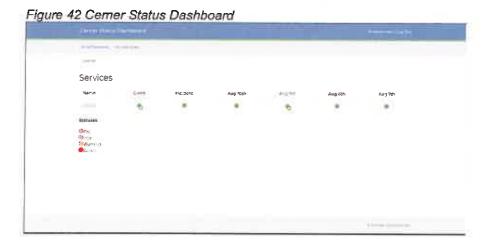
Cerner will provide a monthly report for SLA and KPIs. This will be distributed to the Department based on the approved PWP, which will outline and provide results of SLAs and KPIs in their entirety.

In addition to the monthly report, the Cerner Performance and Cerner Status Dashboards are available to the Department at any time to monitor SLAs and KPIs. The Performance Dashboard monitors applicable solution response times. A view of this dashboard is illustrated as follows:

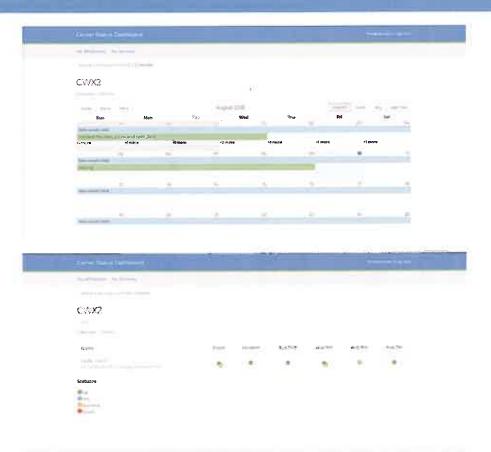




The Cerner Status dashboard, as seen in the following graphic, is the tool that will show planned downtimes and incidents that may occur on the platform.







The solution should provide an interactive, summary-level dashboard without the need for DD207 authorized solution user programming or extensive training.

The HealtheIntent Platform offers different levels of access based upon skillset and authorization of different users. One of those levels of access is the ability to view summary level dashboards while retaining the ability to drill into detail of the data. For example, users use a high-level dashboard pertaining to quality measure status by MCO by measure. Those dashboards are filtered by different sub-populations, MCOs and time periods, allowing end users to obtain desired details. Based upon authorization, users drill down to the member level to determine the specific members who have not met a specific quality measure. This functionality is completed by the end user interacting with the dashboards; additional coding is not required to access data.

**DD208** 

The solution's data access component should support the needs of authorized solution users to execute basic canned queries and canned reports via a dashboard.

As part of the DDI, Cerner will recommend established queries from the standard library. We will work with the Department to define other unique queries to best align with their use cases. These queries are then accessed to authorized users on demand. For example, pre-defined queries identified spend by program with access to underlying claim detail.



The solution should provide a suite of high-level and/or general-level reports designed to provide indicators and general trends within and across the member population.

As part of the DDI, Cerner will recommend established queries from the standard library. We will work with the Department to define other unique queries to best align with their use cases. These queries are then accessed to authorized users on demand. Common trends that are tracked in these reports include utilization, quality measures, trends of high cost services and bundle performance.

DD210

The solution should provide a mature, intuitive, easy-to-use, web-based Commercial-Off-The-Shelf (COTS) tool that addresses the data access requirements in this Request for Proposal (RFP) with an integrated comprehensive tool suite.

The HealtheIntent Platform is a SaaS solution that combines tools (e.g., Tableau and BusinessObjects) with Medicaid and healthcare specific workflows and technologies. The tools included in our solution cover a vast array of potential system configurations, including loading and transforming data, report creation, defining role-based access, and API access.

DD211

The solution's data access component should have the ability to perform impact analyses due to proposed changes of the solution.

When changes are made to reports or the ETL, the solution automatically determines relatedness to downstream processes to allow for evaluation of downstream impact. This information helps to guide design, configuration, and validation (including regression testing).

DD212

The solution's data access component should have the ability for authorized solution users to create their own static or dynamic joins between tables.

The HealtheIntent Platform offers different levels of access based upon skillset and authorization. Ad hoc reporting is based on Cerner standards of unique content configured during DDI. Ad hoc reporting predefines joins between tables to support the most common use cases. This allows non-technical users to access the data quickly and easily.

In addition to models configured by Cerner, authorized client users may define joins on demand and/or create new ad hoc models with new joins. To enable client independence, authorized client users have access to the same tools that the Cerner DDI team uses including non-technical and technical options.

DD213

The solution's data access component should have the ability for query editing to support authorized solution users with query development and modification.

Within the Platform, ad hoc and more technical SQL options allow users to modify their queries based upon use case. For example, additional filters are added, data is pulled in from additional tables, new joins are defined, and data is partitioned to identify rehospitalization within 90 days of inpatient discharge.

DD214

The solution's data access component should have the ability to sort, filter, and find data in query results.

The HealtheIntent Platform visualizes query results within Tableau, BusinessObjects and SQL to allow users to sort, filter and find data.



The solution's data access component should have the ability to show table structure, relationships, and built-in expression-builders, or a natural-language interface in which the authorized solution user can enter a query and the system converts it into Structured Query Language (SQL) or other code.

As part of DDI, Cerner will deliver ad hoc data models with predefined table structures, relationships and built-in expression to facilitate query development without SQL knowledge. For example, a generic claims ad hoc data models contains details about claims, services, providers and member eligibility. The end user selects variables from the model without having to know how the data is joined or understand the SQL that is generated behind the scenes.

DD216

The solution's data access component should have the ability to support, at a minimum, complex "and/or/not" logic.

Complex and/or/not logic is supported via embedded graphical ad hoc reporting as well as the advance SQL editor. The graphical editor supports and/or/not, nested and/or not, subqueries, unions/intersections, wildcard filters, relative date filters, filters with case/math/statistical calculations and many more. For example, using a subquery to identify the highest utilizers and the parent query would return all the care for those users over the last year, limiting to members who were enrolled in specific programs. The technical editor supports additional advanced options based upon the library of SQL functions and capabilities.

DD217

The solution's data access component should have the ability to calculate unduplicated counts of, at a minimum, members, providers, claims, claim lines, and services.

The HealtheIntent Platform supports distinct counts through both the technical and non-technical tools. Standard data models support the most common calculations including distinct counts of members, providers, claims, claim lines and services. Additional distinct counts may be configured by Cerner or DHHR.

DD218

Members

Yes. Please refer to our response to requirement DD217.

DD219

**Providers** 

Yes. Please refer to our response to requirement DD217.

DD220

Claim lines

Yes. Please refer to our response to requirement DD217.

DD221

Services

Yes. Please refer to our response to requirement DD217.

DD222

Others as defined by the Department

The HealtheIntent Platform supports configurable distinct counts. Additional distinct counts may be configured by Cerner or DHHR.

DD223

The solution's data access component should have the ability to support parameter-based queries.

When queries are developed in the Cerner solution, users provide parameters on any of the variables in the system to limit the results or join data together in various ways. Reports prompt



the report user on anything within the system, such as date ranges, programs, etc. The prompted data is then utilized in the query to limit results to the appropriate subset.

**DD224** 

The solution's data access component should have the ability to support including, but not limited to:

Within the Cerner HealtheIntent Platform, queries are based upon industry standards SQL that supports all standard data analysis types of queries, including the full list below. Users write these queries via the technical SQL interface or via the non-technical BusinessObjects and Tableau workflows.

DD225

Inner joins

Yes. Please refer to our response to requirement DD224.

DD226

Outer joins

Yes. Please refer to our response to requirement DD224.

DD227

Unions

Yes. Please refer to our response to requirement DD224.

**DD228** 

Claims

Yes. Please refer to our response to requirement DD224.

**DD229** 

Intersections

Yes. Please refer to our response to requirement DD224.

DD230

Minus operations of multiple datasets

Yes. Please refer to our response to requirement DD224.

DD231

Others as defined by the Department

Within the Cerner solution, SQL is exposed to the end user offering numerous ways to join and analyze the data.

DD232

The solution's data access component should have the ability to support correlated subqueries.

As alluded to in the previous response, the full SQL functionality is exposed, including the ability to write correlated sub-queries.

DD233

The solution's data access component should have the ability to support current American National Standards Institute's (ANSI) Structured Query Language (SQL) standards.

Within the Cerner solution, users have direct access to write SQL or utilize the business intelligence tools to create SQL.

DD234

The solution's data access component should have the ability to apply, at a minimum, weighting and ranking in analyses.

The HealtheIntent Platform exposes SQL to end users with advanced analytics function, such as ranking, partitioning and various weighting scenarios. Clients commonly use these features to identify high costs individuals (ranking), calculate various risk scores (weighting) or do other complex analytical calculations such as identifying the first readmission post discharge.



DD235 The solution's data access component should have the ability for linear programming.

HealtheDataLab contains cutting-edge and advanced mathematical functions including linear programming. In the past, HealtheDataLab has enabled users to perform linear programming analyses to inform policy changes in constrained scenarios, leading to cost efficiencies and improved quality of life of the population.

DD236 The solution's data access component should provide predictive modeling capabilities.

HealtheAnalytics provides users the capability to perform initial predictive modeling through functions supporting logistic regressions, naïve bayes, random forest, and support vector machines. For more complex use cases or for more advanced users we recommend using HealtheDataLab, our state-of-the-art data science environment that leverages the full functionality of predictive modeling techniques. The value of predictive models is only realized once decision makers access the predicted values which is why HealtheDataLab can deploy predictive models back into the EDS ecosystem to be consumed by a broader audience across DHHR and their strategic partners.

DD237 The solution's data access component should support random number assignment of members and providers.

The HealtheIntent Platform generates unique IDs to identify members and providers across all source systems. In addition to standard IDs, random numbers may be generated as part of data transformation and analysis.

DD238 The solution's data access component should provide multi-dimensional reporting abilities that would include slice and dice, drill down, drill up, drill across, and pivot result.

As reports are developed, Cerner supports the ability to configure slice and dice, drill down, up, across and pivot results. For example, a standard report supports user interaction to slice and dice by limiting the data to the members under the age of 18. From there, the user drills down to the specific high cost claims on those identified members, drills up to the provider for those claims, drills across to view other members with high cost claims and pivot results to summarize the costs by month. These interactive features are executed at run time, so the user explores many different scenarios through Tableau and BusinessObjects.

DD239 The solution's data access component should have the ability to provide pre-defined logical drill paths such that the authorized solution user can move up or down in levels without defining a new query.

As reports are developed, Cerner supports the ability for the report author to configure predefined logical drill paths, so the user drills up or down in levels without needing to have a new query developed. For example, the user drills down to specific high cost claims on identified members or drills up to the provider for those claims. These interactive features are executed at run time, so the user explores many different scenarios through Tableau and BusinessObjects.

DD240 The solution's data access component should have the ability to summarize grouping functions.

The HealtheIntent Platform groups on any variable within the platform. Grouping functions may be multiple layers deep. For example, the user may want to evaluate current year spend grouped by MCO then within MCO grouped by geographic region.



The solution's data access component should support stratified random sampling with appropriate statistics and generate random sampling with associated statistics.

Random sampling is a powerful statistical technique that supports a wide range of activities from program integrity to policy simulations. Simple random sampling and some stratified random sampling are generated using HealtheAnalytics functions that come pre-built in SQL. More complex sampling, such as with multivariate distributions containing both continuous and categorical variables, are supported through HealtheDataLab which provides users with state-of-the-art data science tools that allow for virtually any random sampling method that has been invented. For example, a user could conduct Monte Carlo simulations for policy simulations or conduct Markov Chain Monte Carlo (MCMC) sampling as a best practice for input of missing data values.

DD242

The solution's data access component should have the ability to build custom formulas and derivations.

The HealtheIntent Platform offers a continuum with BusinessObjects and Tableau to complete the most common calculations as well as with SQL to complete more complex calculations. For example, a simple calculation performed by the solution would be calculating a child's age in months based on date of birth and service date. A complex calculation example performed by the solution would be a risk score based upon dozens of inputs with different weighting factors and different sequential implications.

**DD243** 

The solution's data access component should support what-if and reverse analyses.

HealtheAnalytics performs basic what-if analyses and HealtheDataLab performs both basic and advanced forms of a what-if analysis. For example, a user may consider changes to the logic defining a quality measure to assess the extent of the population that would be meeting the measure under the proposed change in logic.

A more complex what-if analysis might be required for instances in which the state is interested in adjusting programs or policies like coverage for non-medication based chronic pain services to reduce the reliance on potent long-term opioid therapy. Under this circumstance, there is uncertainty around several variables that impact the outcome (reducing reliance on opioids) such as the extent to which these alternative services will reduce chronic pain, the extent to which members will seek these services, the extent to which current prescribing physicians will order a referral to these services, etc. In order to capture this uncertainty, this kind of what-if analysis would need to be conducted in HealtheDataLab where we run agent-based or microsimulation models leveraging Monte Carlo sampling methods of applicable distributions to account for uncertainty in the chain of events leading to the desired outcome.

DD244

The solution's data access component should have the ability to aggregate or summarize rules based on pre-defined, static reports and data filters.

The HealtheIntent Platform supports the definitions of simple and complex rules. Once created, a rule is reused for as long as it is relevant. Users report that it is helpful to include detailed information with the rule summary to facilitate reuse. Results produced by the rules may be used in any report in aggregate or at the detail level including use to filter, display or perform additional calculations.



The solution's data access component should support descriptive text and have the ability to search for elements, derivations, tags, and reports.

The HealtheIntent Platform supports the definitions of simple and complex elements, derivations, tags, and reports. Within the solution, summary and granular details are searchable for users to easily find previously created content.

**DD246** 

The solution's data access component should have the ability to index authorized solution user-created tables in user libraries to drive queries.

In addition to inherent database storage advantages described below, the DDI, operations teams, and authorized client users define projections to streamline system performance for unique, highly complex client use cases.

Unlike older technologies that rely upon specific index designs, Cerner leverages database storage that utilizes automated caching, columnar storage and massively parallel processing (MPP) as an alternative and higher performing solution. Automated caching optimizes performance for common queries. Columnar storage improves performance by grouping data together by use rather than by row which dramatically reduces disk I/O. Finally, MPP distributes processing across many servers to reduce query time by devoting more processing power per query.

DD247

The solution's data access component should have the ability to generate alerts when business thresholds have been exceeded.

As data is loaded and transformed, business metrics will automatically update. As part of that update, these metrics may be flagged for exceeding business thresholds. Once flagged, data may alert in certain management dashboards as well as generate an email to business leaders.

DD248

The solution's data access component should have the ability to terminate runaway queries.

The HealtheIntent Platform offers automatic monitoring of query execution and assures no one query will slow down other users' queries. This includes segregation of computing power as well as automatic termination for an absurdly complex or long running queries. It is not uncommon for a client user to perform a valid query on billions of rows of data without impacting other users. Likewise, users may inadvertently join data to request Quindecillion (a number with 49 digits) which the system will terminate automatically.

DD249

The solution's data access component should support the needs of authorized solution users to perform simple queries based on point-and-click technology.

Previously created content may be processed on a schedule or on demand via point and click. These options exist regardless if content was developed form the graphical non-technical workflows or the more advanced SQL based option. As part of DDI and operations, Cerner will recommend content from Cerner's library. We maintain thousands of queries in our library and any of those are configured to facilitate simple reuse by a broad set of users.

DD250

The solution's data access component should have the ability to version reports and queries.

Query and report versions are tracked with the ability to revert to past versions, as needed.



The solution's data access component should provide flexible filtering or "sub-setting" to specify the selection criteria for reports.

Within the Cerner solution, users filter results at run time. Multiple filter selection is supported as well as options to define how the filters apply (and/or/not logic). Filters are also typically configured based on the possible values. For example, only valid DRG codes are selectable in the "DRG" filter.

DD252

The solution's data access component should provide modifiable ready-to-use subsets.

As part of the design, Cerner will recommend and work with the client to define the topics of interest, including the need to create subsets. For example, the client may feel the need to perform unique calculations on a specific waiver population. In this example, the subset would be predefined as well as the unique calculations for that population. Over time, the definitions of the measures may change, and they remain configurable over the life of the project.

DD253

The solution's data access component should have the ability to create, save, modify, publish, and share queries.

In the Cerner HealtheIntent Platform, technical queries written directly in SQL and queries written through the graphical application through Tableau and BusinessObjects are created, saved, modified and shared. Sharing of queries is intended to foster collaborative development while still enabling the department to restrict access to data based upon the departments data governance policies.

DD254

The solution's data access component should provide pre-defined templates upon request.

Cerner's solution offers a large library of templates including out of the box calculation templates that include over 1000 quality measures and predefined dashboards on hot topics such as utilization, quality and spending.

In addition, as a part of DDI, Cerner will develop templates unique for clients use cases and are used by authorized users as a starting point and then augmented details of that specific user. DDI also typically include defining one or more report format templates to unify the look and feel of reports with to align with DHHR desires.

DD255

The solution's data access component should have the ability to provide eligibility indicators at a summary level.

The HealtheIntent Platform will maintain granular details for use by reporting when necessary. In addition, Cerner supports roll up functionality to display high level indicators per member and to summarize data across the broader population, i.e. members on a specific waiver by month.

DD256

The solution's data access component should have the ability to provide financial indicators at a summary level.

Cerner's solution will maintain granular details for use by reporting when necessary. In addition, Cerner supports roll up functionality to display financial indicators per member and to summarize data across the broader population. For example, a flag that indicates when per member per month for a specific member exceeds a specific amount.

DD257

The solution's data access component should have the ability to provide utilization indicators at a summary level.

The HealtheIntent Platform will maintain granular details for use by reporting when necessary. In addition, Cerner supports roll up functionality to display utilization indicators per member and



to summarize data across the broader population. For example, a claim header level flag that identifies the visit as an avoidable emergency department visit based upon NYU's (New York University) classification algorithm.

**DD258** 

The solution's data access component should have the ability to provide other indicators, as defined by the Department, at a summary level.

Within the solution, anything is used as an indicator. In addition, as a part of DDI, Cerner develops templates unique for clients use cases and are used by authorized users as a starting point and then augmented details of that specific user.

DD259

The solution's data access component should have the ability to provide access-to-care indicators at a summary level.

Our solution offers standard access to care components that define granular data at the member level regarding proximity to providers based upon drive time. This granular data is viewed and summarized; i.e. what number of members are farther than a 60 min drive to a provider with a specialty in women's health.

DD260

The solution's data access component should have the ability to notify the authorized solution user when user-defined criteria have been met.

As data is loaded and transformed, business metrics will automatically update. As part of that update, these metrics may be flagged for exceeding user-defined criteria. Once flagged, that data may alert in certain dashboards as well as generate an email to appropriate stakeholders.

DD261

The solution's data access component should have the ability to provide an alert system to notify authorized solution users of emerging trends, detection of excessive costs, and achievement of goals.

As data is loaded and transformed, business metrics will automatically update. These metrics may be flagged for exceeding business thresholds. Once flagged, that data may alert in certain management dashboards as well as generate an email to business leaders.

DD262

The solution's data access component should have the ability to apply selections as flexible objects that can be inserted, moved, or removed through drag-and-drop technology to make cross-tabular and multi-tabular reports.

The HealtheIntent Platform allows interaction with data through visual drag-and-drop capabilities of BusinessObjects and Tableau. The objects that are inserted, moved or removed are simple data variables or complex calculations. A complex calculation example performed by the solution would be a risk score based upon dozens of inputs with different weighting factors and different sequential implications.

DD263

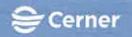
The solution's data access component should have the ability to allow flexible pivoting of rows to columns and columns to rows.

Cerner's solution supports flexible pivoting of rows to columns and columns to row by providing a once click button to swap rows and columns as well as other more complicated options.

DD264

The solution's data access component should have the ability to import metadata from the database catalog and other external sources.

The solution allows metadata, like all other data, to be imported to the system at any time. Once the data is imported, it is searchable and able to be queried to be included or referenced in any analysis.



The solution's data access component should have the ability to export metadata to other external sources.

The solution allows data to be exported, including metadata. This data is exported within the application's user interface or within the solution's API's.

DD266

The solution's data access component should have the ability to provide ease of maintenance of metadata updates.

Metadata updates made directly in the Cerner solution are completed via workflows that are optimized for ease of use. Metadata that is coming from external sources are set up to be refreshed automatically or on demand based upon the characteristics of the source system.

DD267

The solution's data access component should provide authorized solution users with the ability to create and/or import user-defined values or other driver data to inform querying and reporting.

User-defined values are commonly imported via two common approaches:

- Simple: Users may copy and paste long lists into the criteria of a report query. For example, a user may have a list of 200 providers they are monitoring and by pasting that list into a report, the user gets details about claims those providers recently performed.
- Advanced: users may upload files into the database. This process supports very large files (trillions of rows). Security settings may be applied to limit access to data to one or a group of users. Once the user-defined data is loaded, that data may be joined to any other data in the database. This approach is commonly used for larger files and/or processes that may be recurring.

DD268

The solution's data access component should have the ability to import and save userdefined data

Yes. Please refer to our response to requirement DD267.

DD269

The solution's data access component should have the ability to access data from external sources in native form.

Cerner's recommendation is to store source data in an untransformed version as well as any transformed version that may exist. The user will have access to both formats which enables data lineage, assists with troubleshooting and supports unique granular use cases that may arise.

DD270

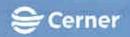
The solution's data access component should have the ability to use data that has been stored in user-defined tables with a parameter that is used to join to the data warehouse to drive queries.

Within the solution, any user defined table is used in queries including joins. For example, a user defined table may identify a high-risk group in a specific sub-population and that table is joined to claim and member information to gather additional details.

DD271

The solution's data access component should have the ability to import a list of user-defined values into the user library.

Yes. Please refer to our response to requirement DD267.



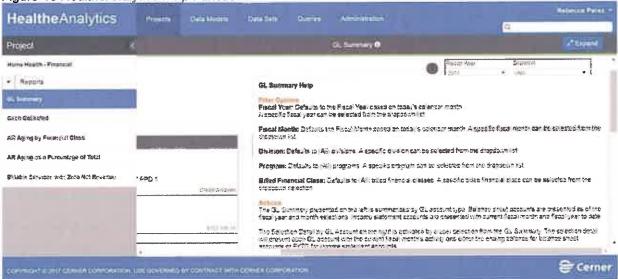
The solution's data access component should have the ability to import external data into tables.

Within Cerner, authorized users import data into the EDS. Once loaded in the EDS, that data is used by any authorized report and/or authorized calculation.

DD273 The solution's data access component should have an online/contextual help function.

Within the Cerner solution, the most common text is embedded directly into the application as shown in the following figure. For example, hover text within a report to explain how a calculation is performed. In addition to text directly in the application, online help and reference pages and program specific documentation is accessible online and able to be accessed via a link within the application.

Figure 43 HealtheAnalytics Help Function



DD274

The solution's data access component should have the ability to add, delete, or develop measures from any report available without needing knowledge of Structured Query Language (SQL) or other complex query language.

Within the Cerner solution, non-technical users have direct access to measures that have been pre-defined, and users add/remove to various reports via the ad hoc graphical interface. In addition, users do have core calculation capabilities including logical and mathematical operators to define some measure. In some instances, users may need an extremely complex measure which are added to the library by Cerner or by the client by using more advanced functionalities such as SQL.

DD275

The solution's data access component should provide a menu of view-ready and print-ready summary-level reports, charts, maps, and graphs.

Our solution offers a catalog of predefined content that will be proposed as part of DDI. Cerner will also work with the client to define unique reports, charts, maps and graphs. Any of the created content is viewed or printed by end users.



The solution's data access component should have an application menu that utilizes pointand-click functionality.

Cerner's solution was developed leveraging our user interface experts whose focus is to ensure the applications are easily usable, ensuring the workflows are easy to use and appropriate to the skill level of the corresponding workflow. The User Experience team consists of a dedicated team of Interaction Designers and Usability Researchers. This core team defines the strategy for user-centered design methodology by incorporating the latest research and testing of applications across development teams. The UX team accomplishes this by evaluating current designs against common heuristics, UI standards documentation, on-site clinician workflow shadowing, iterative research and design feedback from clinicians, and conducting formative/summative usability testing. The Usability Researcher and the solution engineering team evaluate client feedback and metrics gathered during usability testing to iteratively incorporate design enhancements back into the development cycle.

The solution features a state-of-the-art user interface with unmatched data visualization and drill-down capabilities. Commands and actions are intuitive to the task- at-hand and relevant help functions are integrated in the user interface. For example, access to the most commonly used reports by that user and with one-click, the ability to access the report. There are also buttons to perform common operations like copy and paste and drag and drop functionality to add complex measures with a single click of the mouse.

**DD277** 

The solution's data access component should have the ability to graph reports and make the reports presentation-ready without the need to export the data to third-party software.

Within the Cerner HealtheIntent Platform, all report creation activities are done within the embedded Tableau and BusinessObjects functionality and at no point is it necessary to export a report to a local computer.

DD278

The solution's data access component should have the ability for online maintenance of reports including adding, deleting, editing, copying, and pasting actions.

As referenced above, our user interface expertise includes the ability copy entire reports as well as sub applications of reports, so the user modifies reports as they deem necessary.

DD279

The solution's data access component should support data visualization techniques.

The solution supports a variety of visualization techniques by leveraging embedded industry leading tools such as Business Objects and Tableau in order to allow States to assess various operational, financial, and programmatic initiatives in a variety of ways with supporting details. Cerner works with the client to determine the most effective way to visualize the data for optimal analysis whether it be through trend lines, histograms, tree maps, scatter plot, or density charts as examples.

DD280

The solution's data access component should have the ability to schedule Department-specified reports for execution and route the reports automatically through email.

Our solution generates reports in seconds, eliminating the need to schedule and alert on reports. When reports require complex processing, the Cerner solution supports scheduling reports for based on DHHR's needs. Any report may be routed through email as part of the scheduling operation.



The solution should have the ability to build, name, and save multiple user-defined searches and sort parameters to allow authorized solution users to repeat the same search/sort queries.

Within the Cerner solution, users filter, and sort query results based upon their specific use case. The system also supports sharing those queries to facilitate reuse.

DD282

The solution should have the ability to capture and incorporate into queries and reports any date-sensitive occurrences that may impact analytics and reporting, including, but not limited to:

Cerner recommends persisting values that are applicable for each given time period. This enables the system to understand when the changes occurred and apply the appropriate value based upon when the activity that took place. Based on this data, users decide how they handle the changes in date-sensitive occurrences. For example, the user may only want to show activity that occurred during the latest policy effective dates.

## DD283 Rate changes

Please refer to the response to requirement number DD282. For example, previous clients have utilized reports that compare costs to rates in the period before and the period after a rate change to determine if the rate change resulted in better cost to rate alignment.

## DD284 Policy changes

Please refer to the response to requirement number DD282. For example, a report that has been utilized by other clients have grouped activities prior to and after the policy change to determine if the policy change, which was intended to improve a specific outcome, had the desired impact.

### DD285 Health plan changes

Please refer to the response to requirement number DD282. For example, our clients have evaluated the impact of network changes as part of a health plan and the impact it has on preventative services in rural communities prior to and after the changes.

# DD286 Legislation

Please refer to the response to requirement number DD282. For example, legislation changes often have major impact on trends prior to and after legislation. Clients have historically focused either on the raw data or accounted for the legislative impact by adjusting results or focusing analytics on a particular time period.

DD287 Others as determined by the Department

Please refer to our response to requirement DD282.

DD288 The solution should have the ability to capture and incorporate into queries and reports any data field in the Medicaid Management Information System (MMIS).

Within the Cerner solution, MMIS, like any other data and any data field, can be accessed by the query framework once loaded in the system.

DD289 The solution should have the ability to link external data to any structured data field in the solution to serve as a search/sort query parameter.

We bring years of experience in helping clients identify how to maximize data from disparate sources and use that data to drive informed decision-making. The HealtheIntent Platform



captures data from internal and external sources, such as public health or behavioral health data, and make it available for incorporation into analytics, reporting, forecasting, and mapping, where appropriate. It consumes the needed data, and once the data processes and normalizes, the data is available for use. The HealtheIntent Platform will support enhancing the value of data by appending related attributes from other source and external source datasets. These attributes, once incorporated, are available for reporting or use in the data model.

Source data goes through a structured process where it is mapped to data models within the HealtheIntent Platform. This allows the HealtheIntent Platform to organize the data and align it to health care concepts as well as process it through the master person matching logic. As a result, these mappings create a longitudinal record for the member that contains integrated data across the disparate sources.

Central to accomplishing the ingestion of external source data is Cerner's Master Person Matching system capability, which is the internal Cerner Master Person Matching for the Platform. It features algorithms to match incoming data to existing member records using 12 demographic properties. The Master Person Matching capability's probability matching algorithm is extremely effective at identifying if data is related to an existing member record and uses all available data to determine relatedness between records. The system assigns a similarity score for each match. The system will link the member record with the data that meets configurable matching thresholds and does not require human validation. In cases when an automated match does not meet the probability match threshold or is inconclusive, Cerner staff intervene to make matches and consult with client resources, if necessary.

The system is not restricted from appropriately matching external data that does not contain these 12 parameters, however. It still successfully identifies, and links source and target mappings based on data model concepts. For example, the system is leveraged related concepts and link census data to member records based on the member address contained in the Platform record.

DD290

The solution should maintain a library of reports organized in a manner that facilitates the use of and secure access to these reports.

The HealtheIntent Platform will centrally maintain a DHHR report library which includes standard Cerner content, content developed by Cerner during DDI, content developed by Cerner during ops and DHHR configured content. When content is created, we recommend leveraging built in features to group content, define read access, define write access and define discoverability access. When enabled for a report, Discoverability enables users to search reports that they don't have access to but still get details such as who to contact to get access and a description of the report. These features promote reuse while still enforcing security and visibility required by data governance.

DD291

The Vendor solution should provide the functionality to view the results of wild card searches including, but not limited to, both single character and string wild card search for all searchable fields.

The HealtheIntent Platform includes the standard query interface, including single character and string of character wild card options



The solution should have the ability to utilize all data, queries, analyses, and reporting in the solution to produce geospatial analytics and maps.

Within the Cerner HealtheIntent Platform, any data in the EDS is be analyzed by the GIS platform. Most common data in the GIS platform are address information about members, providers, pharmacies and social determinants of health locations, such as grocery stores. Results from the GIS flow back into queries and reports enabling complex queries to identify specific populations as well as interactive visuals that display a map with physical locations and physical locations that are isolated. For example, members who are more than 30 minutes travel time from a primary care physician.

DD293 The solution should have the ability to perform statistical analyses on geospatial data.

Within the Cerner solution, HealtheDataLab offers users a wealth of spatial statistics functions including, but not limited to, network analysis, spatial heterogeneity, diffusion modeling, spatial simulations and agent-based modeling, spatial interpolation, neural networks and Bayesian techniques to compensate for missing values, spatial clustering and interactions that are geospatially dependent. These techniques are applied in concert to answer important questions regarding physical access to care, exposure to environmental determinants of health, and the spread of infectious diseases to name a few.

As the state advances in their own analytics prowess, the Platform grows with them. That is, most of their staff likely will conduct simple analyses with geospatial information, like viewing a heat map of drive times, or counting the services received by members that are at 10-minute, 20-minute, and 60-minute drive times. However, as the State matures their analytics, they may want to begin running full blown statistical model that involve GIS drive time data to see to what extent drive time is a barrier in the likelihood of receiving services while controlling for a variety of other confounding variables.

DD294

The solution should have the ability to identify, query, analyze, and report on episodes of care or bundled services.

Cerner has experience working with clients on bundle payment models including standard content for all 35 CMS BPCIA and commercial payer bundles. Standard content identifies bundle events, qualifying services provided during that bundle and associated costs. Based on those calculations, clients evaluate historical payments compared to equivalent bundle payments. The same calculations may be used once the bundle is implemented to determine bundle payments, evaluate overall bundle impacts and refine the bundle over time.

Clients also may predict future implications of a bundle. For example, compliance with one of Cerner's standard quality measures may be correlated with shorter length of stay and lower costs for a specific bundle. Accordingly, clients may want to emphasize that measure as one way to help obtain higher bundle performance.

DD295

The solution should have the ability to develop and calculate fee-for-service (FFS) rates, actuarially-sound managed care rates, bundled fee-for-service and managed care rates, and others as determined by the Department.

HealtheDataLab, equipped with data science and statistics tools, allows DHHR users the ability to conduct typical rate setting and other actuarial activities such as distribution fitting, forecasting, risk modeling, generalized linear models, and dimensionality reduction. In addition, our data science team contains staff with expertise in statistical modeling and machine learning with backgrounds in medicine, business, and human behavior. While our data science team provides typical risk stratification analyses to set FFS or MCO capitation rates, we go beyond



this reactionary approach by running policy microsimulations that provide insights into the viability and return on investment surrounding alternative payment models. For example, we have identified that receiving both physical therapy and psychological therapy for chronic pain populations within 30 days of an initial diagnosis dramatically reduces their reliance on opioid medications. Through forecasting ROI analyses, we identify the likely future costs of relying too heavily on opioid medications to treat chronic pain relative to the cost of increasing the utilization of physical and psychological therapy. An analysis such as this is then be leveraged to structure bundled fee-for-service and managed care rates to both reduce inefficiencies and improve the quality of life of your members.

### DD296

The solution should have the ability to calculate travel distance including, but not limited to, member's home and relevant provider locations.

The HealtheIntent Platform enables geographic information systems (GIS) to view, analyze, share, and interact with maps and geographic information based on several different data point. Our GIS reporting capabilities provides the ability to visualize services, access to care, and populations to better understand the client's members. This powerful function includes the ability plot maps, calculate distances, calculate travel time, and produce analysis on distance travel. Cerner adds in the ability to calculate as the crow flies' distances and drive time distances.

# DD297

The solution should have the ability for authorized solution users to create and view all reports and maps on mobile devices in accordance with Department, State, and federal security and privacy policies and procedures.

As a web-based application, Cerner supports the ability for mobile devices to access the application via the web browser. Core encryption and security features are available for these workflow and Cerner will work with department to define the role-based access that is appropriate for mobile users.

# DD298

The solution should have the ability to display to authorized solution users the number of pages to be printed before the authorized solution user proceeds with printing a report.

As part of report configuration, the Cerner solution reports include a page number and total number of page metric within the report.

#### **DD299**

The solution should allow authorized solution users the ability to add comments to reports.

Authorized solution users access Cerner's uCern application to have the ability to add comments to reports. The user starts a thread which contains a link to the report being discussed. Authorized users may comment in the thread.

#### DD300

The solution should have the ability to capture and report on solution response time.

Cerner's engineering is constantly monitoring the system and making updates to ensure the system is performing at the highest level, constantly getting feedback from 173 clients. We have access to the auditing of workflows and data base transaction response times.

#### **DD301**

The solution should have the ability for authorized solution users to view, print, export, and analyze audit data through an integrated component of the solution.

All activity and actions are tracked and logged and viewed in our auditing tool, Cerner P2Sentinel. The auditing application is viewed using an easy to use GUI front-end and standard or custom reports is created.



The solution should provide the ability for all solution forms, documents, data files, data, and manuals to be accessible online, indexed, and content-searchable with version control.

The HealtheIntent Platform maintains metadata including version history for configured content and data. Supplemental documentation not included in the application is accessible online and searchable with version control via the site.

DD303

The Vendor should employ a Relational Database Management System (RDBMS) or Object Oriented Database Management System (OODMS) that is easily configurable and role-based.

The underlying database of HealtheEDW is a RDBMS. Access to the data and workflows are controlled by role-based access. For example, role-based access controls who has read/write access, who loads data into the platform and accesses specific subsets of data (e.g. employee medical claims). The database includes standard data models as well as the ability to extend data modes based on DHHR's use cases.

**DD304** 

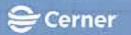
The solution should have the ability to support analytics techniques including, but not limited to:

Cerner has recognized the need for healthcare analytics to continue maturing which is why Cerner created HealtheDataLab. HealtheDataLab marries cutting-edge and popular statistical, mathematical, machine learning, and other data mining tools with our client's data in a single secure environment with the capabilities to deploy analytics output back into the Cerner ecosystem delivering insights to the right person at the right time. When conducting analytics projects, much of the time is spent simply cleaning the data, but because HealtheDataLab is integrated with the Cerner ecosystem much of the data cleaning is already performed which enables analysts and data scientists to derive insights more quickly. HealtheDataLab also utilizes elastic computing capabilities that allow users to run complex computations on large volumes of data very quickly without disruption to production servers.

In addition to HealtheDataLab, our team of data scientists have the education and experience applying these analytics techniques to solve complex healthcare problems which allows DHHR the flexibility of leveraging data science services on an as needed basis throughout the life of the contract. Not only do our data scientists perform these analytics functions on behalf of DHHR, but they also offer valuable strategic leadership in guiding the department on identifying useful problems to solve with analytics techniques, best practices when implementing these techniques, and how to avoid potential ethical concerns related to bias in machine learning and predictive models.

#### DD305 Predictive modeling

Predictive modeling is a rapidly growing application in healthcare as it helps organizations better plan for future events. We have developed algorithms that predict total budgetary spending for future fiscal years aiding in a more accurate appropriation of funds. Other algorithms we have developed predicts the risk that a pregnant member will experience at least one maternal morbidity during their pregnancy. Not only does Cerner offer out of the box predictive models, but with HealtheDataLab, DHHR users create their own predictive models. HealtheDataLab contains open source data science programs that contain both popular and cutting-edge functionality necessary to build predictive models such as neural networks, decision trees, support vector machines, regressions, and Kalman filters. Finally, building predictive models requires highly skilled users which are often in short supply; our team of data scientists are



available throughout the life of the contract to perform predictive model development for DHHR on an as needed basis.

## DD306 Machine learning

Machine learning, which is often synonymous with predictive modeling, is typically leveraged within the Cerner solution to produce predictions about future events or automate a decision or process. For example, machine learning has been applied to retina scan images to cost effectively diagnose diabetic retinopathy without the need for a trained human to manually make that determination. Conducting machine learning requires similar functionality and skillsets that predictive modeling requires. Therefore, HealtheDataLab application performs anything from the most basic machine learning to the most complex cutting-edge techniques. DHHR users can develop their own machine learning algorithms in HealtheDataLab and deploy these insights back into the ecosystem to automate processes or be consumed by other department users and collaborators. In addition, Cerner's data science team is highly trained in machine learning, so DHHR can leverage their services on an as needed basis throughout the life of the contract.

# DD307 Data mining

Data mining is a broad term often used to describe the analytics process of sifting through large volumes of data to identify trends, correlations, patterns, and clusters that could be further leveraged to gain insights into business problems. Therefore, data mining requires a wide range of mathematical and statistical functionality as well as highly skilled users who know how to apply these techniques and integrate the output of each into a synthesized actionable output. Cerner's HealtheDataLab offers the functionality to compute everything from simple correlation matrices and k-means clustering to more advanced forms of dimensionality reduction such as independent applications analysis, text mining such as latent Dirichlet allocation, neural networks, and non-linear dynamic modeling to identify potential patterns of causality despite a lack of or inconsistent linear correlations. In addition, Cerner's data scientists are fluent in data mining techniques and perform these tasks on behalf of DHHR as well as provide strategic consulting when and where the application of data mining will be a fruitful investment.

# DD308 Others as defined by the Department

Within the Cerner solution, HealtheDataLab leverages open source data science tools which means that the top researchers and scientists in the areas of mathematics, statistics, machine learning, and artificial intelligence are constantly adding to the functionality that exists in HealtheDataLab. In addition, Cerner's data science team has backgrounds in cognitive science, medicine, computer science, and business allowing for a diversity of ideas when applying analytics techniques to problems. When engaging with Cerner's data science team, we will work in good faith with the department to define problems to solve, align the proper analytics techniques to apply, assess data needs, integrate disparate data if necessary, develop and test the analytics, and communicate findings in a timely manner.

# DD309 The solution should have a single point of entry for all authorized solution users

The HealtheIntent Platform utilizes a federated approach to authenticate and authorize users. All users sign in via the same entry point. Once authenticated, the user by default lands at a home page which contains the reports and workflow that are most applicable for the specific user. Cerner also supports many use cases where users distribute web links to go directly to specific reports for ease of use for the end user.



The Vendor should provide a data access component that works efficiently in the enterprise data solution (EDS) environment.

Cerner's solution deeply integrates the data access component with the overall EDS environment. Cerner is responsible for all aspects, hardware and software to ensure the two seamlessly work together.

DD311

The solution should have the ability to distribute reports and/or information from the enterprise data solution (EDS) portal chosen by the Department.

Within the Cerner solution, each report created in the application has a unique web URL which is distributed via email, various websites and the HealtheEDW portal. When users click the web link, they are required to authenticate if they aren't already authenticated to the client's federated identity store. Once authenticated, the user is taken directly to the relevant report. The system also supports export of reports to PDF or another standard format.

DD312

The solution should provide the ability to allow authorized solution users to view, manipulate, download, and save reports locally.

Within the Cerner solution, authorized users may modify reports, including adding filters and changing visualizations. The user may also download reports.

DD313

The solution should have the ability to maintain report inventories for authorized solution users.

The HealtheIntent Platform automatically maintains an inventory of reports that is viewable and searchable by authorized users.

DD314

The solution should track Medicare deductibles and coinsurance paid by Medicaid for all crossover claims, by Member and program type, and by other data elements as defined by the Department.

Within the Cerner HealtheIntent Platform, once Medicare data is loaded into the platform, it is be analyzed against claims and all data to perform various analysis. For example, clients will analyze individuals who have Medicare coverage to ensure Medicare is responsible for all appropriate payments for all applicable care.

DD315

The solution should provide a tool for managing data sharing requests from both internal State agencies and external entities.

A log is be created on the Project Portal that houses data source information and what the contents of the information. These requests would then be processed according to data governance process with audit details persisted.

# **Assumptions:**

Based on the assumption that data that is sent from the source is fully loaded in the Cerner solution, data is unloaded, selected and filtered based upon pre-defined parameters.

#### 2. DATA QUALITY

Refer to the relevant technical specifications located in *Appendix 1: Detailed*Specifications and pertinent narrative in Section 4: Project Specifications in this RFP to cover solution capabilities in this area. The Vendor should describe its approach to Data



Quality below. The narrative response for this category should be organized using the appropriate subject matter area as per *Appendix 1: Detailed Specifications*.

Cerner offers end-to-end data quality monitoring services. We apply advanced technologies, proven methodologies, and expert human services to ensure the quality of data received at initial load and throughout the life of the contract. When onboarding a historical data source, our data quality monitoring validates accuracy and completeness of data against balance files. Records that pass validation proceed with processing. Those records that fail validation are monitored by a central Cerner team that provides services to evaluate issues as they arise.

Our team investigates, makes recommendations, initiates Service Requests, and works closely with DHHR to ultimately resolve any given issue. If, for example, a service request is logged due to a file that was not received, we will contact the source system to request the data. Each communication and step undertaken to resolve the issues will be tagged to the Service Request and made visible to DHHR until successful resolution.

The activities undertaken during the investigation and resolution phases are produced in data quality reports that are available to DHHR within the Project Portal. DHHR end-users easily note checks performed, review conclusions, and drill down to additional information as needed.

Data quality monitoring is performed throughout the life of the contract to ensure that new data continues to meet standards. Critical issues are targeted for automated alerting and messages. We also disregard suspect data to prevent it from impacting production reports. To include or exclude additional records, we reprocess the Platform at any time.

## Unique to Cerner

With Cerner's data quality applications, users leverage our data load templates to quickly move data into the Platform and map it appropriately. We provide libraries of over 150 quality checks and templates and are continually adding to this number. Each Cerner client benefits from being a part of our shared community as applications and enhancement identified at any single site are made available for each of our partners. The table below provides a small subset of our extant quality checks.

Table 26 Data Quality Check
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Cerner Data Quality Check Typ	e Example	DHHR Data Quality Check Type
Missing file	Source is unable to send	Data completeness     Data timeliness
Inaccurate row count	<ul> <li>Balance file indicates 1000 claims, but only received 500</li> </ul>	Data completeness
File volume	<ul> <li>File volume is within a reasonable range of variance</li> </ul>	Data completeness     Data timeliness
Volume trending abnormally up/down	•Volume is 10% higher than expected	Data inconsistency
Data trending	<ul> <li>Report historically returns 50% male/female ratio, but today it returned 100% males</li> </ul>	Data inconsistency
Null values	Missing provider information	Data completeness
Invalid codified values	•Invalid ICD or CPT code	Data validity     Data conformity



Improperly formatted data	Text received for a numeric field	Data integrity     Data conformity     Data accuracy
Suspect data	Claim dated 2023     Admission date in the future	Data integrity
Integrity checks	•A claim service line without a parent claim header line	Data integrity

Regular strategy sessions are a component of our implementation strategy. In these sessions, our experts recommend best practices and collaborate with DHHR to prioritize the data validation crucial to project success.

DQ001 The Vendor should provide Data Quality Management for all data coming into the solution. Ingested data undergoes a validation process to ensure data quality at initial historical load. That quality is maintained throughout the life of the contract. The system performs checks against incoming data sets to validate the data against the balance files. Records that fail validation are centrally monitored by Cerner to identify and evaluate issues as they arise. Our team investigates, makes recommendations, creates Service Requests as needed, and works closely with DHHR to ultimately ensure resolution of the issue.

The activities during the investigation and resolution process are captured and produced in data quality reports that are available to DHHR within the Project Portal. With this reporting system, DHHR can clearly confirm that checks are performed, understand the conclusions, and drill down to additional information as required. Please refer to the introduction at the beginning of this section for additional information.

DQ002 The solution should have the ability to provide data conversion as needed to feed the solution.

Cerner consolidates data from the legacy system and external data sources in a centralized structured EDS This serves as the single source of truth for data reporting and analysis. As new data sources are identified, users may continue to load them into the Platform throughout the life of the contract. Validation and data quality checks, report production, and exceptions are documented in a data quality report and reviewed with the department until issues are appropriately resolved.

DQ003 The Vendor should develop a process to rectify source data quality issues via data checks and edit procedures as data is extracted from the solution data sources with limited impact on the data source vendors.

The HealtheIntent Platform provides the capability to identify, correct, and report data quality issues including data redundancy, incorrect values, missing values, and inconsistent values of the data sources. Users have the tools to continually monitor the quality of the data extracted. Please refer to the introduction at the beginning of this section for additional information.

Should an issue arise, we engage a dedicated Cerner team member to research the issue and complete the appropriate steps to resolve the issue. All issues are tracked with the associated Service Request.

We minimize impact to sources by incorporating non-standard data and converting it to industry standards. For example, if the source is sending proprietary codes, we convert these values to standards without impacting the source (such as LOINC, SNOMED CT, etc.). We also minimize



impact to sources by accepting data in a wide range of formats which often allows reuse of already existing source extracts.

Should a critical issue stem from the source, Cerner may either void the data or communicate with the source to address the issue(s) (e.g., a claim with a paid date of 2050). Alternatively, users elect load the data or exclude it from the load.

Our expectations for the source are to provide the extract on a regular schedule as agreed, provide data dictionaries, and resolve data quality issues that may originate in their system. We provide specific examples of quality issues to facilitate rapid resolution.

In parallel with Cerner and these expectations, the process includes, but is not limited to:

- Data Discovery and Data Acquisition performed at the onset of each extraction.
- Exchanging documentation created to explain the specific data requirements requested to facilitate a successful data interface between i2iLinks™ and your specific systems.
- Should an issue arise, we engage a dedicated i2i team member to research the issue and complete the appropriate steps to resolve the issue.
- Discuss all appropriate quality issues within the data with the Source, Cerner, and i2i. All issues are tracked with the associated Service Request.
- We minimize impact to sources by incorporating non-standard data and converting it to industry standards.
- The i2iLinks<sup>™</sup> application supports all interfaces and has monthly releases to address upgrades and any data quality issues.

DQ004

The Vendor should ensure data integrity is checked throughout the term of the contract as an integral part of operations to ensure quality data.

Data integrity is checked throughout the life of the contract. Quality checks are automatically performed daily as data is loaded. Issues with data are tracked through Service Requests, prioritized, and addressed as part of operations. Critical issues are prioritized and worked immediately. Some issues have obvious resolutions (e.g., if a source did not send a file as expected, the source will be alerted immediately. Others may require investigation by a Cerner team member. Cerner will work with DHHR and source systems as needed.

DQ005

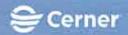
The Vendor should develop processes to maintain data integrity, consistency, accuracy, and timeliness of the solution data.

Cerner's data quality monitoring consists of both automated and manual tools to maintain data integrity, consistency, accuracy, and timeliness of the solution data. Automated data validation routines ensure data loaded is consistent and complete as compared to the balance files. We provide a library of over 150 quality checks and are continually adding to this number. Please refer to the Data Quality Checks table in the introduction at the beginning of this section for a list of additional quality check examples.

**DQ006** 

The solution should have the ability to provide an audit trail on all changes to tables including, but not limited to:

We maintain the original data sent to us and maintain a full audit trail of all transactions to support your needs. Our system includes a centralized audit logging tool, P2Sentinel, which records the details of who made changes to tables in a very granular level. In addition, we provide versioning within the application which helps organize and track what needs to be released and revert to previous releases if necessary.



DQ007 Business and system dates

Our audit trail transactions are all-inclusive and support the ability to include business and system time and date stamps.

DQ008 Begin date

Our audit trail transactions include the process begin date.

DQ009 Effective date

Our audit trail transactions include the date of when the files were processed.

DQ010 End date

Our audit trail transactions include the date of when the file process ended.

DQ011 User-ID and assignment/enforcement in all tables that can be modified

We store the user ID that updated the job, along with a full audit trail of any adjustments made to the ETL process.

DQ012

The solution should provide a tool that supplies data profiling abilities that obtain comprehensive and accurate information on the content, quality, and structure of data in the source systems as an ongoing process.

Cerner's data quality monitoring provides one centralized tool that offers data quality profiling abilities for content, quality, and structure of data. For example, we identify a recorded member birthdate of '1800' as a content issue, missing ICD-10 code(s) as a quality issue, and duplicate claims service lines as a structural issue. Please refer to the Data Quality Checks table at the beginning of this section for a list of additional quality check examples.

DQ013 The solution should provide a tool that continually monitors the data quality within the solution and internal analytic applications.

Cerner's data quality monitoring includes tools and automated processes to continually monitor and address data issues at ingestion, ensuring consistent collection and enforcement of data integrity rules. The data quality monitoring includes both the raw data as well as transformed data accessed via reporting. Please refer to our response in DQ004 for additional information.

DQ014 The solution should support audit and control processes that identify, report, and summarize errors in the data.

Our data quality monitoring allows users to view specific data quality validations at both the summary and detail levels. Please refer to the Data Quality Checks table in the introduction at the beginning of this section for a list of quality check examples.

DQ015 The solution should provide a tool that includes error/exception handling processes that identify/isolate the errant data.

We provide a library of over 150 quality checks and are continually building upon these resources. These quality checks are run continually to help identify key data quality issues. Some of these checks are critical, with potentially significant impacts on the end user if promoted to production. These checks maintain domain stability with prior state data and do not allow the corrupt data to proceed to production. These critical issues then branch off into a process whereby a dedicated Cerner resource investigates, engages the client as needed, and works to resolve the issue promptly. Please refer to the Data Quality Checks table in the introduction at the beginning of this section for a list of additional quality check examples.



DQ016

The Vendor should maintain a process to identify and track all errors and discrepancies found in the solution pursuant to Service Level Agreements (SLAs).

A Service Request is logged for each identified error. Cerner's Service Request portal will help DHHR and the Cerner team to log and track each error found in the solution. Potential enhancements to the solution are logged and tracked in this portal, as well. Errors and discrepancies are regularly triaged and the status of these issues are communicated to DHHR and the project team on a mutually agreed upon timeframe.

Cerner is a leading U.S. supplier of health care information technology with a client base of more than 27,500 provider facilities around the globe. We have extensive experience in supporting our clients, and we understand the importance of quickly addressing critical issues. Our model provides tiered levels of support 24 hours per day, 7 days a week, 365 days per year to best accommodate our clients' needs. Our thoroughly tested approach keeps the system and business operations running efficiently and smoothly throughout the life of the contract, providing reliable and responsive services for DHHR.

DQ017

The Vendor should maintain a process to notify the Department of errors and discrepancies found in the solution pursuant to Service Level Agreements (SLAs).

As per the communication plan, Cerner will work with DHHR to establish weekly or bi-weekly operations status meetings to discuss the status of each error logged in the Service Request portal. Cerner will also send weekly operations status reports to DHHR detailing the status of all issues.

For SLAs regarding critical issues and rapid turn-around times, notification rules support expedited communication. This communication is linked to the Service Request and is fully auditable. It informs the individuals attached to a given ticket and any other key staff members identified in the communication plan.

Additionally, Cerner will send recurring or ad-hoc communications to DHHR to inform about scheduled outages and unscheduled outages respectively. Cerner will also establish ad-hoc meetings with DHHR should the project team require clarification or additional information regarding an issue.

DQ018

The Vendor should provide recommendations for proposed resolution/fixes for identified issues within a timeline approved by the Department and pursuant to Service Level Agreements (SLAs).

To provide recommendations for error resolution, our team will first analyze the error(s) then identify the source of said issue is (e.g., ETL process, source file, data accuracy, data complete, etc.) and provide pragmatic recommendations to resolve it. Recommendations will be provided within the mutually agreed-upon timelines based on the communication plan and issue priority.

DQ019

The solution should support data integrity through system controls for software program changes and promotion to production.

All DDI and operations changes are configured in the configuration environment, validated, and ultimately promoted to production. Access to promote is limited to a certain subset of users; if there is an official standard operating procedure in place it must be approved before promotion can take place.



DQ020

The solution should include an integrated automated logging and tracking component for all inquiries between authorized solution users and Vendor staff that includes, but is not limited to:

We provide an integrated and automated logging and tracking application for all Service Request inquiries using our online web portal where Service Requests are logged and tracked, including all communication relating to the Service Request. Service Requests are periodically audited to ensure compliance with the support processes and look for continual process improvement.

DQ021

The date and time of inquiry

The date and time of when the Service Request was logged, as well as subsequent electronic communications and phone communication are documented and tracked.

DQ022

The form of inquiry (phone, email, and instant messaging)

The type of communication is documented and included as part of the Service Request.

DQ023

The ability to create a summary level nature of the inquiry

Summary level information regarding the issue is documented and tracked with the Service Request.

DQ024

The ability to document details of the nature of the inquiry

Detailed information regarding the issue is documented and tracked with the Service Request. This includes details of the investigation, any questions and communication to/from Cerner/DHHR, screen shots, etc. Any documents are attached based upon the needs of the request.

DQ025

The authorized solution user

All individuals associated to the Service Request is documented and tracked, including individuals on both the DHHR and Cerner side.

DQ026

The Vendor staff member

All individuals associated to the Service Request is documented and tracked, including the vendor staff member.

DQ027

The response details

SR tools capture and track response details automatically. This includes details of the investigation, any questions and communication to/from Cerner/DHHR, screen shots, etc. Any relevant documentation is attached based upon the needs of the request.

DQ028

The date and time of the response

Cerner's electronic Service Request system tracks all details, including the date and time of the response. Written communication (e.g., email) is automatically inserted into a Service Request, and all phone communication is documented in the Service Request to maintain a persistent record.

DQ029

The applicable notes on the resolution of the inquiry

All applicable notes relating to the Service Request and the resolution are documented within the Service Request view. This includes details of the



investigation, any questions and communication to/from Cerner/DHHR, screen shots, etc. Any documents are attached based upon the needs of the request.

DQ030 Other details as determined by the Department

Any critical elements relating to the Service Request is documented and tracked as a part of the Service Request. We have extensive tracking fields based on our experience across thousands of clients that will meet the vast majority of your needs. There are also attachments, comments and other fields which are adaptable to meet your unique needs.

DQ031 Reporting on all inquiries as requested by the Department

From the Service Request view, DHHR users have access to all Service Requests and the ability to search the knowledge base, submit or view a Service Request, view application changes, or download a report. This supports the ability to quickly obtain lists and report on specific things that may be of interest, such as all high priority Service Requests within the last year, all open Service Requests, and other various filtering options.

In order to best support you, we meet regularly to prioritize and resolve open Service Requests. As per the communication plan, Cerner will work with DHHR to establish weekly or bi-weekly operations status meeting to discuss the status of all the errors or discrepancies logged in the Service Request portal. We will also release weekly operations status reports to DHHR providing the status of all the issues and discrepancies.

DQ032 The solution should provide the ability to automate meta-tagging including, but not limited to:

Cerner's User Experience (UX) team develops our applications to ensure ease of use. The UX team consists of a dedicated interaction designers and usability researchers. This core team defines the strategy for user-centered design methodology by incorporating the latest research and testing of applications across development teams.

Part of the UX team strategy is meta-tagging: the organization of content to ensure that it is readily available. A component of meta-tagging includes projects, which not only group related content but also defines read and write access. A user might create a project related to specific waiver which contains many reports, maps and queries. Based on security settings, project metadata is exposed to everyone (so others can request to join the project), access to the reports to a large group and access to modify those reports, queries and maps to a smaller group. Additionally, each component within the project may be tagged with additional descriptors beyond the simple title.

Metadata noting interaction with reports is also maintained as part of standard audit logging. This includes access records of maps and queries. Details about query, map, and report access are exposed in that audit log.

DQ033 Reports

Yes. Please refer to our response to requirement DQ032.

DQ034 Queries

Yes. Please refer to our response to requirement DQ032.

DQ035 Maps based on their contents

Yes. Please refer to our response to requirement DQ032.



DQ036 Other elements as requested by the Department

Yes. Please refer to our response to requirement DQ032. Common additional tagging includes ad hoc data models, data transformations and other commonly configured applications.

DQ037

The solution should have the ability to de-identify and re-identify data within the solution as needed.

Data access s controlled via role-based security. Common scenarios include core department users have full identified access to data, whereas a research group may have access to only de-identified data and may further be restricted to just subsets of the overall population. When appropriate, those researchers may request for certain de-identified records to be identified and the state has the ability to approve that request and convert a non-PHI identifier into the corresponding PHI information.

DQ038

The solution should provide the ability to review and report on data quality metrics including, but not limited to:

As described in our introduction, we provide a library of over 150 quality checks and are continually adding to this number. Please refer to the Data Quality Checks table in the introduction at the beginning of this section for a list of quality check examples.

DQ039

Data completeness

Yes. Please refer to our response to requirement DQ038.

DQ040

Data consistency

Yes. Please refer to our response to requirement DQ038.

DQ041

Data validity

Yes. Please refer to our response to requirement DQ038.

DQ042

Data conformity

Yes. Please refer to our response to requirement DQ038.

DQ043

Data accuracy

Yes. Please refer to our response to requirement DQ038.

DQ044

Data integrity

Yes. Please refer to our response to requirement DQ038.

DQ045

Others as defined by the Department

We evaluate every data source to determine the appropriate checks to use out of our library, as well as any new checks required. As part of our implementation strategy, we will conduct strategy sessions, recommend best practices based on our experience, and work with DHHR to prioritize the data validation crucial to your success.

DQ046

The solution should support production of X12N 270 transactions to query other payer eligibility files and ability to process responses.

The i2iLinks<sup>™</sup> application supports production of X12N 270 Transactions to query other payer eligibility files and the ability to process responses.



DQ	047
	V-F1

The solution should comply with relevant standards including, but not limited to National Information Exchange Model (NIEM), CAQH-CORE, Health Level Seven International (HL7), X12, EDI, and HIPAA for data interchange.

The i2iLinks<sup>™</sup> application conforms with HIPAA requirements during data exchange to ensure data security and integrity, including, to National Information Exchange Model (NIEM), CAQH-CORE, Health Level Seven International (HL7), X12, EDI, and HIPAA for data interchange. The solution also supports integration standards including HL7 v2, HL7 v3 CCDA, and FHIR STU3.

DQ048

The Vendor should support each phase of Council for Affordable Quality Healthcare - Committee on Operating Rules for Information Exchange (CAQH-CORE) rules.

The i2iLinks<sup>™</sup> application supports each phase of Council for Affordable Quality Healthcare - Committee on Operating Rules for Information Exchange (CAQH-CORE) rules.

### **Assumptions**

- Standard platform updates delivered through our continuous code delivery are approved and mandated on a schedule defined by Cerner. Client configuration deployment schedules will be defined jointly by Cerner and DHHR as defined in the PWP.
- 2. Changes to our SaaS offering will be passive and released upon a schedule that Cerner defines and will therefore not cause disruptions.

# 3. HARDWARE AND INFRASTRUCTURE

Refer to the relevant technical specifications located in *Appendix 1: Detailed Specifications* and pertinent narrative in *Section 4: Project Specifications* in this RFP to cover solution capabilities in this area. The Vendor should describe its approach to Hardware and Infrastructure below. The narrative response for this category should be organized using the appropriate subject matter area as per *Appendix 1: Detailed Specifications*.

The HealtheIntent Platform is a SaaS solution that combines state-of-the-art technology, deep health care analytics expertise, and extensive experience in managing state and private health care programs. In selecting our HealtheIntent Platform for West Virginia's EDS, DHHR gains the technology, expertise, and flexible data integration platform needed to meet its program objectives. The Department will also gain the benefits of our partnership with AWS, Cerner's cloud computing platform. This collaboration capitalizes on Cerner's four decades of experience in digitizing health records and transforming the health care industry. With Amazon's broad business and cross-industry experience and AWS' global infrastructure and depth of services, we aim to enable a new wave of innovation to transform the health care landscape. Cerner and AWS expect to provide significant advancements in interoperability and data portability for our clients and the members they serve.

The HealtheIntent Platform is highly flexible in data ingestion. Not only do we integrate data from external, publicly available, and non-public sources, we leverage this data for reporting and analytics. The HealtheIntent Platform also configures non-standard interfaces. This versatile data integration is facilitated by our solutions' ability to leverage an array of file types as data sources. Internally, our centralized platform serves as the foundation for each of our solutions;



interfaces are not required between any of the applications and tools offered in the HealtheIntent Platform.

In order to ensure successful integration of data, we will collaborate with DHHR and other project contractors to identify and map component data and interfaces. All planned interfaces are to be defined in the detailed scope of work for required functionality.

IN001

The solution should have the ability to retain a historical record of all reports created within the solution including, but not limited to:

The HealtheIntent Platform will provide the historical record of all reports created within the HealtheIntent set of applications and tools.

IN002

Report parameters

The HealtheIntent Platform retains report parameters when a user generates a report. Cerner's system includes a centralized audit logging application, P2Sentinel, for tracking end user access to confidential member data—enabling a capability to audit how member information is accessed throughout an enterprise regardless of purpose. Our auditing application was designed to enable the audit of user actions as member-identifiable information is accessed. This information includes data identifying the user, the member, the context of the access, and the actions performed to the member data, including actions that create, verify, view, modify, complete amend\error correct and print member information. Your organization will be able to view the audit logs created or create reports from the logs using the report writer for the solution.

IN003

Date created

The HealtheIntent Platform retains the date created when a user generates a report.

IN004

The authorized solution user who created the report

Our solution retains authorized solution user information when a user generates a report.

IN005

All fields included in the report

The HealtheIntent Platform retains field level details when a user generates a report.

IN006

Others as defined by the Department

P2Sentinel evaluates the latest regulations and industry recommendations to enhance our solution. The updates to P2Sentinel will be controlled and managed by Cerner. Cerner will work with DHHR on any additional use cases through the life cycle of the project,

IN007

The solution should ensure an authorized solution user experience that meets the response time goal for system latency of no more that 20 milliseconds for each workload interaction.

The HealtheIntent Platform manages large, rapidly expanding volumes of data to provide efficient query performance for data warehouses and other query intensive applications. It is constantly monitored for CPU memory, storage capacity and performance which allows Cerner to stay ahead of resource demands. If these resource demands exceed the current trend, the cloud operations team will add the appropriate system resources without downtime. Cerner strives to achieve 2 seconds or less for user interactions with our systems with some workflows achieving 20 millisecond response times. Cerner provides a highly available, redundant environment capable of withstanding a single application failure with no (or minimal) disruption to a contracted (SLA) or operational service. As the main requirement to access our SaaS



solution is the internet, we cannot guarantee response times as the Department will manage their Internet Service Provider usage.

**IN008** 

The solution should provide tools for maintaining and managing changes and modifications made by authorized solution users to queries and reports.

The appropriate users, through our Role-Based Access Controls, utilize ad hoc reporting to perform changes and modifications to both queries and reports. Workflows within the solutions such as Tableau and BusinessObjects do not require SQL knowledge to generate reports. Users view version history of reports and revert to a previous version if the need arises. Once data has been ingested, users create datasets by combining data from different sources, or create datasets using SQL or through an interactive dataset designer tool. For example, a user could choose to create a dataset in support of a specific use case that combines MMIS claims and clinical health-related data with housing, education, and employment data. Once the dataset is developed, users then utilize the dataset to create reports, individual visualizations, or dashboards. In addition, DHHR users create temporary tables. Content from temporary tables become permanent based upon the standard operations process, agreed to by the Department.

IN009

The solution should have the ability for hardware, operating system, database management software, and other infrastructure software to meet capacity needs including, but not limited to:

The HealtheIntent Platform will have the appropriate hardware, operating system, database management software to meet capacity needs for DHHR. Our partnership with AWS will position the Department for future growth and capacity.

IN010 Bandwidth

Currently, the HealtheIntent Platform handles 173 clients with 1,130 unique data connections. HealtheIntent's architecture utilizes AWS which houses approximately 47.5% of all cloud traffic in the United States. As of Q4 2019, Cerner currently has 3337 nodes which have processed or stored over 20 PiB of data. With our Big Data platform, hosted at AWS, we do not see a limit to our capacity to expand the system. Cerner provides the technology infrastructure, core network layer systems, industry standard security controls, servers, storage, and resources to support the entire SaaS solution. Cerner's engineering and technology teams are responsible for ensuring that the platform will have adequate bandwidth into and out of the AWS data center. DHHR will be responsible for ISP services and connectivity for their facilities and remote locations.

IN011 Central processing unit processors and speed

Cerner will be responsible for providing the necessary system processing to meet capacity requirements. As of Q4 2019, Cerner has 3337 nodes which have processed or stored over 20 PiB of data. With our Big Data platform, hosted at AWS, we do not see a limit to our capacity to expand the system. The HealtheIntent Platform is a multi-clustered environment, with back-ups across the platform. Due to the nature of Hadoop, should a node fail, one of several back-up nodes resume processes. If PCs fail or switch off mid-process, dependent on when the fail occurs, data and work are typically saved. Given that access is via secure HTTP, and virtually all processing is done server-side, processes are kicked off (and typically saved) and not interrupted if there is an issue, regardless of the type of issue.

IN012

Cache size



With our proposed cloud offering, Cerner will provide the necessary configuration to meet performance and availability targets. Unlike older technologies that relied on specific cache designs, Cerner leverages a database storage which utilizes automated caching, columnar storage and massively parallel processing (MPP) as an alternative and higher performing solution. Automated caching optimizes performance for common queries. Columnar storage improves performance by grouping data together by use rather than by row which dramatically reduces disk I/O. Finally, MPP distributes processing across many servers to reduce query time by devoting more processing power per query. Cerner continually reviews the latest technologies that enhance the functionality, stability and performance of our cloud solutions. With the flexibility of the cloud, Cerner will change/integrate new infrastructure without disruptions to end users. DHHR will benefit from these enhancements throughout the lifecycle of the contract.

# IN013 Data storage capacity

Cerner will be responsible for providing the necessary data storage to meet capacity needs. Cerner uses a distributed architecture that allows the system to scale as necessary. Cerner's use of AWS S3 storage allows unlimited storage volume and objects. As of Q4 2019, the current data storage capacity of our AWS platform is 32.54 PiB.

## IN014 Retrieval speed

Our infrastructure teams have years of experience managing SaaS solutions and are led by executives who were directly involved in the procurement of AWS. The same individuals responsible for managing today's HealtheIntent Platform performance designed and configured what has become our current SaaS environment a decade ago. Cerner experts use our Status Dashboard to access a current snapshot of the status of critical Cerner-hosted services including retrieval speed. We use the Cerner Status Dashboard to communicate downtimes, performance issues, upcoming maintenance tasks, and other incidents. Clients opt-in to receive emails when a status changes on any service. The Cerner Status Dashboard is now Cerner's primary method for communicating information about Cerner-hosted services.

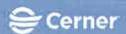
## IN015 Others as defined by the Department

By contracting with Cerner to use our cloud SaaS platform, DHHR can expect Cerner to manage the entire lifecycle, across all project phases, of application support and performance. The Department will not require resources to manage any of the infrastructure or worry about keeping in pace with technology or capacity requirements. Cerner understands that DHHR's business needs are ever-changing and Cerner will work with you to address those needs in good faith as those needs arise.

The solution should have workflow processes that prevent shifting architecture inefficiencies to manual processes performed by authorized solution users.

The HealtheIntent Platform strives for automation when possible. Cerner designed the HealtheIntent Platform to manage large, rapidly expanding volumes of data to provide efficient query performance for data warehouses and other query intensive applications. For example, we separate storage environments to allow for a flexible environment, and our API library automates the ETL process as well as provide API's that enable further automation for unique client needs.

The Vendor should specify to the Department the hardware, software, main operating system (OS), and configurations necessary to run the solution on client devices.



The HealtheIntent Platform is a cloud-based offering and the solutions are accessed via the web using standard browsers, such as Chrome®, Firefox®, Internet Explorer®, and Safari®. We support varied OS types, such as Windows®, iOS®, and Android®. Internet connectivity is the main requirement. Nearly all users will utilize a web-based browser to access the HealtheIntent Platform. A few advanced users of the HealtheIntent Platform have the option of installing Tableau Desktop and other desktop applications to facilitate API's to support additional advanced workflows.

IN018

The solution should have business intelligence that adheres to the Department's business policies and procedures.

The configuration reporting software of the system, including loading and transferring data through reports, is highly configurable. Our reporting and analytics applications allow DHHR to query the ingested HealtheIntent Platform data, create your own datasets, data models, projects, dashboards, and leverage pre-built content. Our SaaS solution provides software and infrastructure tuned for growth and performance to meet your ever-changing business needs. Cerner will work with the Department to approve design specifications that align with Department policies. The solutions allow DHHR authority to grant access to users by providing only those privileges which are essential to perform their job. Additionally, the solution also offers role-based access controls, which provides access to information at a task level and restricts access to only the information required to perform the job functions. AWS hosting utilizes industry standards to ensure security, stability, and user interaction to support client policies and procedures.

IN019

The solution should be a service-oriented architecture (SOA) with reusable and interoperable components and services.

We apply a modular, flexible approach to systems development, including the use of open interfaces and exposed API; the separation of standardized business rule definitions from core programming; and the availability of standardized business rule definitions in both human and machine-readable formats. The HealtheIntent Platform utilizes an N-Tier design of software that is scalable over time and highly available. We have deployed our HealtheIntent Platform for 173 clients without disruption. The HealtheIntent Platform was designed in a modular approach to accommodate changes in solution functionality. Should one piece of a solution require replacement, the overall HealtheIntent Platform would not be affected.

IN020

The Vendor should document a holistic, multi-dimensional data view that includes pictures, diagrams, and flow charts of the architecture requirements at the summary and detail levels for suppliers, the Department, and authorized solution users to visualize the solution components and interactions.

Cerner understands the importance of having data models that are designed around DHHR's data, business practices, policies, and needs. Data models assist the Department in making informed decisions by offering actionable, detailed data for deeper visualizations and insights.

Cerner's solution is a cloud-based infrastructure, which houses, maintains, and manages the HealtheIntent Platform that scales in near real-time to meet the service levels and requirements as your business needs evolve and change. We maximize the use of configuration and configurable technology to meet the business requirements of the MMIS environment. Cerner provides a broad data model that enables the ability to create and manage data sets, relationships between data sets, and the semantic business layers that are created and published. Custom and standard data models include text data that is structured, semi-structured and



unstructured. Data may be analyzed via SQL, open source data science tools, Tableau and BusinessObjects. Data may also be exported from HealtheIntent for analysis independent of Cerner.

IN021

The Vendor should ensure the architecture and application design used for the solution allow for the volume, frequency, and variety of data to be scalable, added and updated as needed by the Department.

The HealtheIntent Platform is a proven SaaS platform in use with 173 clients that utilize thousands of sources. Most clients grow their use of the platform over time with some clients growing to over 50,000 users, 100+ integrated source systems and thousands of reports. Even these large clients continue to grow, and Cerner is committed to supporting this growth.

Cerner's project team will add data sources as the Department's needs change and accommodate growth from just a few reports to thousands. As DHHR continues to add data sources throughout the lifecycle of the project, our HealtheIntent Platform is scaled on demand to fit the needs of the Department. The HealtheIntent Platform is technology agnostic, meaning it accepts data from nearly any source. These data sources may exist in a variety of formats, at any frequency, and do not rely on a single unique identifier. Our proprietary data ingestion process and probabilistic algorithms ensure that we match disparate data appropriately.

The HealtheIntent Platform is a SaaS solution that combines state-of-the-art technology, deep health care analytics expertise, and extensive experience in managing state and private health care programs. HealtheIntent is a scalable, cloud-based infrastructure designed to meet the service levels and requirements of a best-in-class enterprise data warehouse solution. Cerner supports complex public and private sector clients, including in the Medicaid realm.

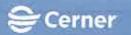
In the past three years we have rapidly increased the data variety, scale, and intelligence capacities of our HealtheIntent Platform. There is always room for more growth, however. To that end, we have announced a partnership with AWS to better position our HealtheIntent SaaS platform for the future. AWS is a leader in cloud-hosting, and DHHR will benefit from the joint expertise of Amazon and Cerner to deliver an efficient SaaS platform.

IN022

The Vendor should provide independent application environments to support unit testing (software), system integration testing (SIT), user acceptance testing (UAT), and production deployment.

Cerner ensures that platform software and configured content are validated via our System Development Life Cycle (SDLC) process. As a SaaS offering, all platform software has been centrally tested to ensure passivity before being released. Centralized testing includes unit test, System Integration Testing (SIT) and UAT. This SaaS approach allows Cerner to stand up multiple environments within days complete with all hardware, ETL engine, ETL templates, visualization software, prebuilt data models templates and pre-built reports templates.

Once the core platform is deployed, all content will be configured in the configuration environment and then promoted through UAT and then production. As defined in the SDLC process, required testing includes unit, SIT and UAT. The process also requires the Department approval before content is promoted. Automated processes facilitate the movement of content between environments.



IN023

The Vendor should provide independent application environments (sandboxes) to support authorized solution user testing and training.

The configuration and UAT environments support solution user testing of releases. In addition, DHHR has the option of developing reports, extracts and other content directly within the production environment but in a sandbox that is logically separated for security reasons as well as separated so that development will not impact production performance. This second option allows for more users to create content with minimal overhead while still ensuring production stability.

We will also provide a dedicated environment to support training activities. Typically, this environment is updated with content before promotion to production to allow for hands on training. Users are free to create mock content as part of training without impacting production.

IN024

The Vendor should provide a solution that minimizes the cost of changes to business rules and business processes.

Cerner leverages three components to minimize cost of changes to business rules and processes:

- Pre-defined analytics content: Cerner has an ever-growing library with over a thousand measures (e.g. Adult Core Set, etc.) and reports. Cerner augments this library of content with innovations derived from Cerner, Cerner clients, and industry best practice.
- Simplification via configuration changes: In lieu of labor-intensive coding techniques, our system applies data integration tools to create ETL, data models, and reports
- Automation of ETL updates with data normalization and EMPI: We have experience with over 2,000 different data sources and understand the implications of changes to data sources. Cerner data processing includes machine learning to standardize, normalize and link disparate person records. These automated approaches facilitate faster ETL updates and allow many reports to continue to function without manual update.

In addition to these Cerner components, i2iLinks<sup>TM</sup> will support all applicable interfaces with monthly releases to minimize the cost of changes to business rules and business process. Included in the solution and subsequent releases would be the following predetermined factors:

- i2iLinks<sup>™</sup> delivers decades of experience in Extract, Transfer, and Load (ETL) knowledge with over 100 EHR and Practice Management interfaces across more than 2,600 clinical delivery sites. Clients have achieved:
  - Industry standard compliant file interfaces (HL7, X12, etc.) for transmission of clinical data
  - Cutting-edge direct database interfaces (MS SQL) for customized import of clinical data
  - o Secure transport and authentication systems (SFTP, SOAP with SSL, etc.)
  - o I2iLinks<sup>™</sup> connects a comprehensive and configurable set of interfaces that powers collection, consolidation, and normalization of all types of data.



IN025

The Vendor should provide a solution that integrates new technology in a way that minimizes any negative impact to the solution and authorized solution users.

Cerner will be responsible for all infrastructure upgrades, including the costs and procurement of sub-licensed software, hardware, storage, and internal networking. Cerner drives improvements of the HealtheIntent Platform to maintain highly available and effective solutions. Redundancies in system configuration allow for releases of new code without downtime. Cerner's scheduled maintenance for routine updates is performed monthly, during off-peak business hours, to reduce the potential for end-user impact. Upgrades and system changes are installed in a rolling fashion allowing continuous use of the system.

IN026

The Vendor should provide modular components and processes that lengthen the solution's life span when components are updated and/or replaced.

We designed and built the HealtheIntent Platform with as a single integrated system. We followed guidance from CMS in this design, and further expanded its power and utility through our partnership with AWS. Thanks to our platform's power and adaptability, the main architecture of the solution is not impacted with individual solution updates and replacements. The individual application components of our SaaS offering allow for modular development with the ability to change data integration pieces and API's. Cerner has undergone a significant architectural change with our move to AWS to accommodate technology advances. Our SaaS changes follow a rolling timeline with minimal impact to end users as a result of our move to AWS. Our experience will help DHHR meet current and future technological advances needed for Medicaid management.

IN027

The Vendor should provide a solution that is adaptable and extensible to accommodate business and technology changes.

The architecture of our SaaS platform allows Cerner to stay up to date on industry trends such as artificial intelligence and machine learning. As the technology industry continues to grow and enhance, our HealtheIntent Platform adds new technologies quickly as they become available.

IN028

The Vendor should provide the ability for authorized solution users to run multiple sessions concurrently and have multiple views in the same environments, application, and solution components.

The HealtheIntent Platform is accessible via web browsers such as Google Chrome<sup>®</sup>, Mozilla Firefox<sup>®</sup>, Apple Safari<sup>®</sup>, and Internet Explorer<sup>®</sup>. Users have multiple sessions open via one of the web browsers viewing the same environments, application, and application components.

IN029

The solution should have the ability to provide a toolbar with common toolbar utilities including but not limited to:

Cerner utilizes a user interface team to help enhance the HealtheIntent Platform with appropriate toolbar access. The User Interface team will continue to enhance the current capabilities and future capabilities of the HealtheIntent Platform toolbars as they become available.

IN030

Highlight

The HealtheIntent Platform's applications are built-in browser capable and highlight within Tableau and BusinessObjects. Cerner utilizes a user interface team to help enhance the HealtheIntent Platform with appropriate toolbar access. The User Interface team will continue to enhance the current capabilities and future capabilities of the HealtheIntent Platform toolbars as they become available.



IN031 Copy

Our solutions use built-in browser functionality when appropriate. The ability to copy within Tableau and BusinessObjects is available. Cerner utilizes a user interface team to help enhance the HealtheIntent Platform with appropriate toolbar access. The User Interface team will continue to enhance the current capabilities and future capabilities of the HealtheIntent Platform toolbars as they become available.

IN032 Paste

The HealtheIntent Platform's applications use built-in browser functionality when appropriate. The ability to paste within Tableau and BusinessObjects is available. Cerner utilizes a user interface team to help enhance the HealtheIntent Platform with appropriate toolbar access. The User Interface team will continue to enhance the current capabilities and future capabilities of the HealtheIntent Platform toolbars as they become available.

IN033 Zoom

The HealtheIntent Platform's applications use built-in browser functionality when appropriate. The ability to zoom within Tableau and BusinessObjects is available. Cerner utilizes a user interface team to help enhance the HealtheIntent Platform with the appropriate toolbar access. The User Interface team will continue to enhance the current capabilities and future capabilities of the HealtheIntent Platform toolbars as they become available.

IN034 Others as defined by the Department

The HealtheIntent Platform's applications use built-in browser functionality when appropriate. Cerner understands that DHHR's business needs are ever-changing and Cerner will work with you to address those needs in good faith as those needs arise. Cerner utilizes a user interface team to help enhance the HealtheIntent Platform with appropriate toolbar access. The User Interface team will continue to enhance the current capabilities and future capabilities of the HealtheIntent Platform toolbars as they become available.

IN035

The solution should have the ability for screens to be maximized, minimized, scrolled, and zoomed without the use of external, non-solution-based hot keys, and without hindering standard Windows capabilities.

The HealtheIntent Platform is accessible via web browser (e.g., Google Chrome®, Mozilla Firefox®, Apple Safari®, and Internet Explorer®). These browsers support maximize, minimize, scroll, and zoom.

IN036

The solution should provide the ability for efficient sharing, management, and stewardship of data and data queries.

The HealtheIntent Platform empowers the Department to control the data sharing, management, stewardship of data, and data queries. Our content security defines what a user can and cannot do in the workflow, as well as what data models a user can access. For example, the load of sensitive financial information is viewable by users deemed appropriate by the Department. The security is flexible to similarly provided users can collaborate with their peers to create and share content. In addition, the platform exposes metadata content so that users are aware of sharable content and request access.

IN037

The Vendor should work collaboratively with the Department to minimize existing barriers internally and externally, as defined by the Department.



Our SaaS offering allows DHHR to administer the domain and share content between DHHR users and outside agencies. DHHR will have the appropriate access to work independently with the HealtheIntent Platform, and Cerner will be available to the Department for complex scenarios requiring additional collaboration.

IN038	The solution should provide components that deliver asynchronous communication, timely
114030	alerts and notifications, and support social and collaborative environments.

Cerner utilizes eService to track and communicate system and data issues. This tool provides transparency between Cerner and DHHR of issues related to the HealtheIntent Platform. The Department will have access to our uCern (online client collaboration) groups and pages to collaborate with other Cerner clients and Cerner development teams. Our collaboration pages allow DHHR users to share information and receive information from other communities with common interests.

IN039	The Vendor should document the solution's architecture and clearly define service end points where system abilities can be added and/or modified without requiring changes to the end points of the solution.
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As a SaaS, HealtheIntent is designed to be highly configurable without code changes to the underlying platform. The below table describes our current service endpoints:

Configuration	Description
Loading Data	Data load configuration is defined in workflows within HealtheIntent. Workflow support the definition of metadata (e.g. load frequency, file format, etc.) as well as processing logic such as source-to-target mappings.  Authorized client users may be granted access to load data. Clients often use these tools to rapidly prototype new cutting-edge initiatives within sandboxes.
Data Models	Data model configuration is defined in workflows within HealtheIntent. These workflows begin from a blank slate, from previously configured DHHR models, or leverage standard models from Cerner's library. Any stored content may be reused and extensively modified. Model configuration includes the definition of the table structure, keys and supporting documentation.  Authorized client users may be granted access to define data models. Clients often use these tools to rapidly prototype new cutting-edge initiatives within sandboxes.
Transformations	Data model configuration is defined in workflows within HealtheIntent. These workflows begin from a blank slate, from previously configured DHHR models, or leverage standard models from Cerner's library. Any stored content may be reused and extensively modified Standard Cerner content includes thousands of transformations based on experience across our client base.  Transformation configuration has access to granular SQL capabilities supporting complex logic to modify data format, calculate measures, aggregate, sequence and partition. Transformation configuration also includes details about transformation execution including schedule or sequential triggers.
Ad-hoc Reporting Models	Ad hoc models define join paths, calculations, use-case thermology and embedded reference text so that non-technical users create reports via a drag and drop interface. At hoc models are defined in workflows within HealtheIntent. These workflows start from a blank slate, be based on previously configured DHHR ad hoc models or leverage standard ad hoc models from Cerner's library. Any content that is reused may be reused as is or be extensively modified or extended. Standard Cerner content includes hundreds of models based on experience across our client base.  Authorized client users may be granted access to define ad hoc reporting models. Clients often use these tools to rapidly prototype new cutting-edge initiatives within sandboxes.
Reports	Data model configuration is defined in workflows within HealtheIntent. These workflows begin from a blank slate, from previously configured DHHR models, or leverage standard

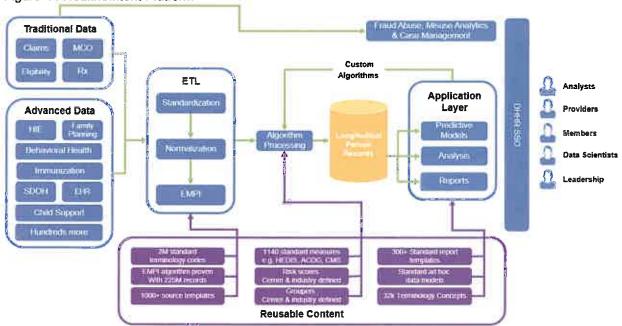


	models from Cerner's library. Any stored content may be reused and extensively modified Standard Cerner content includes hundreds of reports based on experience across our client base. Report configuration has access to extensive Tableau and BusinessObjects capabilities to define report layout, visualizations, maps, calculations, filters, etc. Authorized client users may be granted access to define reports. Clients often use these tools to empower a wide range of teams to create reports that best support their use cases
User Privileges	User privileges are configured using our Role-Based Access Controls. The security of the Cerner solutions provides access to information at a task level and restricts access to only the information required to perform the job functions.  HealtheEDW supports role-based security for content authors and content viewers, limiting both to the appropriate levels of security for general content and reports. This allows users to create the content and the reports for either themselves or for less technical users who will only view the content.
Data Science	HealtheDataLab is Cerner's data science tool in which the main user experience is driver by open source data science tools, a web-based interactive programming environment in which code written by users can be executed with results delivered in near real-time. HealtheDataLab will expose normalized ingested data and convert into pre-formatted, easy-to-use data models to support research, data science, and clinical intelligence initiatives.  This advanced statistical analytics capability provides the data in both identified and deidentified formats. Additionally, HealtheDataLab enables users to incorporate data sets not otherwise aggregated into the HealtheIntent Platform into analyses within the tenant as depicted in the following graphic.
APIs	All APIs are well-defined and pre-designed features of our suite of solutions. Nearly any type and form of data is pushed (ingested) into our solution's ingestion APIs. Data extraction consulting services are utilized to assist in extracting and pushing data into the ingestion APIs for each data source.  The various HealtheIntent Platform applications support the ingestion of health care industry standard formats along with the ability to easily configure non-standard interfaces. Data integration is facilitated by the solution's ability to leverage a diverse range of file types as data sources.  Our integrated solution uses a single centralized database in which interfaces are not required between the applications and tools offered in the HealtheIntent Platform. For a successful integration, we will work collaboratively with other project contractors, and DHHR to ensure successful integration of application data and interfaces and the required interfaces as defined in the detailed scope of work for all required functionality.

The HealtheIntent Platform has a longitudinal record of the DHHR population with built-in intelligence to create meaningful data and reports to help manage the Department's population. In the following figure, we illustrate the HealtheIntent Platform, which at its foundation is a SaaS solution combining state-of-the-art technology with our team's deep health care analytics expertise and extensive experience helping organizations and communities manage their Medicaid population.







We propose HealtheEDW, our enterprise data warehouse capability, built on a 6-tier SaaS environment residing on the HealtheIntent Platform that Cerner will host and manage. As a Platform foundation, HealtheIntent is our scalable, cloud-based infrastructure designed to meet the service levels and requirements of a best-in-class enterprise data warehouse solution. The HealtheIntent Platform is a leader in data processing as our solutions use Medicaid traditional data sets such as Claims, MCO, Eligibility, and Rx. The HealtheIntent Platform uses advanced data such as HIE, immunizations, Behavioral Health, Family Planning, Social Determinants of Health, EHR, Child Supports, and more. DHHR will benefit from Cerner's reusable content to help assist with Medicaid's current requirements as well as positioning the Department to changes in Medicaid requirements. Cerner's reusable content includes 1000+ source templates, 300+ standard Medicaid specific standard report templates, standard ad hoc models, and many more. By selecting the HealtheIntent Platform for West Virginia's EDS, DHHR gains the right technology, expertise, and flexible data integration platform needed to meet its program objectives.

IN040

The Vendor should develop a solution where all components return the same results when the same parameters are used.

Cerner utilizes a single source of truth for each application of the HealtheIntent Platform regardless of what workflow the user is accessing. As new data is loaded, that source of truth would also be updated.

IN041

The solution should provide the ability for concurrent use of the solution by other applications, components, and/or software.

We developed our solutions to accommodate access by large numbers of concurrent users and processes. The HealtheIntent Platform utilizes internet connectivity for access utilizing Google Chrome®, Mozilla Firefox®, Apple Safari® or Internet Explorer®. Cerner's architecture is designed with open and interoperable Platforms that integrate with other systems to connect clinical, operational, and financial data across the health care ecosystem. The Cerner Open Developer



Experience (CODE) expose standards that make it possible to connect applications or easily transfer discrete data that are used to empower organizations, people, and communities. All APIs are well-defined and pre-designed features of our suite of solutions. Nearly any type and form of data is pushed (ingested) into our solution's ingestion APIs. Data extraction consulting services are utilized to assist in extracting and pushing data into the ingestion APIs for each data source. Multiple processes access an API simultaneously.

IN042

The Vendor should provide a solution that is compliant with the Medicaid Information Technology Architecture (MITA) Standards and Conditions.

The HealtheIntent Platform is a proven solution, ready to deploy, and aligns with MITA and the Seven Conditions and Standards. HealtheIntent meets the DHHRs' needs and requirements and has been designed, developed, implemented, and is continuously refined with new innovations.

Understanding the importance of maximum federal financial participation (FFP), we have taken the proactive step of requesting that an independent third party assess our solution against the MITA framework and MECT checklists. Our objective was to derive out of the box alignment and identify the gaps in our solution. The assessment was performed in the first quarter of 2016, after the new 42 CFR 433.112 funding rules were implemented.

IN043

The Vendor should provide a solution that maintains a holistic view of emerging technologies, and aligns with Department, State, and federal health information technology (HIT) standards.

The HealtheIntent Platform aligns with CMS' vision of modularity and is designed to prevent DHHR from being locked into outdated technology. Cerner demonstrates our commitment to modernization with the need to use data to drive significant and sustained improvements in the Medicaid Information Technology Architecture (MITA). Cerner's flexible approach to system development includes open interfaces and exposed application programming interfaces (APIs) with the separation of business rules from the core programming. The use of open interfaces and exposed APIs ensures it will extract and export the data needed to interoperate with other entities, including CMS. HealtheIntent solutions align with MITA and the Seven Conditions and Standards. The HealtheIntent Platform meets the necessary requirements and has been designed, developed, implemented, and is continuously refined with new innovations.

IN044

The Vendor should maintain data governance to enable efficient, effective, correct, and relevant decision-making regarding all aspects of data related to the solution.

We acknowledge DHHR has an established data governance structure and Cerner will collaborate with the Department to leverage and incorporate Cerner's data management experience and methodologies within your policies and procedures. Cerner will introduce available data management tools during initiation and collaborate on how we will use the tools to meet the DHHRs' needs.

During the initiation phase, Cerner will include a process that will utilize data governance as a feedback mechanism to improve the quality of metadata. Throughout the project life cycle, the Department benefits from consultative guidance on how to enhance your governance model. Cerner offers a team of subject matter experts who work with DHHR through designated project gateways, or checkpoints, that are designed to safeguard project progression.

The HealtheIntent Platform reflects the importance of effective data governance. We ensure the management of the information assets entrusted to the solution and seamlessly integrate these with the management of other information components of the system. The Platform will utilize



metadata management and repository solution as a reference resource as we refine and augment the information from all data sources. As data is received and used for analytic purposes, it comes with a data dictionary for data lineage and data transparency. This data dictionary is exposed to all users.

IN045 The Vendor should monitor the solution and anticipate maintenance needs and scheduling.

As a SaaS solution, Cerner is responsible for maintaining the hardware platform and the underlying software for all of Cerner's clients. Cerner's well-tested approach for ongoing operational services ensures the platform and business operations operate efficiently and will provide reliable and responsive services for DHHR, members, providers, and other stakeholders.

The HealtheIntent Platform operates 24 hours per day, 7 days a week with exception of scheduled maintenance downtimes. The solution architecture is designed for high availability with various levels of system redundancies. The HealtheIntent Platform does not require individual maintenance windows for each client. Instead, all clients using the Platform benefit from regular maintenance activities. Cerner will perform all upgrades to the infrastructure, including everything from the costs and procurement of sub-licensed software, hardware, storage, and internal networking to the ongoing responsibility of ensuring all applications continue to meet the infrastructure requirements Cerner's customers require.

Cerner continues to drive improvements of the Platform to maintain highly available solutions. Redundant system configuration allows for releases of new code to typically not require downtime. Cerner's scheduled maintenance for routine updates is performed monthly, during off-peak business hours, to reduce potential end-user impact. The Cerner Status Dashboard sends out notices for any planned downtime and provides 14-day notice for monthly maintenance activities.

If downtime is necessary, Cerner will provide at least 14 days advance notification to the Department via an online service dashboard and email notification (if DHHR opts in). Emergency installs requiring downtime will be communicated as quickly as possible. However, based on the risk to the infrastructure, these may not always be communicated within the five (5) business day requirement. An example of such risk could be a specific vulnerability event (WannaCry, HeartBleed) which may require an immediate patch or update. In addition, Cerner's Account and Operations Manager will communicate the issue to DHHR.

Upgrades and system changes are installed one host server at a time. This allows for upgrades to be completed with no downtime from the perspective of the end-user. In many circumstances, operating system upgrades may be performed in the same way. In the event of a major change that requires downtime, Cerner will communicate with the Department well in advance to discuss planning. Cerner will leverage our experience and proven practices to assure there is minimal to no disruption to the end-user workflow; only emergency events occur outside the normal maintenance windows, and no additional costs accrue to DHHR.

IN046

The Vendor should develop a process to coordinate with the Department on batch control, balancing of input with data source vendors, scheduling extract, transform, load (ETL) processes, and data load cycles.

The process of coordination and communication with clients will be jointly implemented with the Department. Our current coordination process covers our strategy and execution of all activities. A main goal in the design of our final agreed upon processes is to provide the highest content



and communication without overly burdening the source vendors. This includes, but is not limited to:

- Engaging a schedule to align with the Department requests and the data sources, to include Data Discovery and Data Acquisition. Included within this schedule is:
  - Exchanging documentation created to explain the specific data requirements requested by the Cerner team to facilitate a successful data interface between i2iLinks<sup>™</sup> and your specific systems.
- The i2iLinks<sup>™</sup> solution's control and execution of all aspects of the ETL process.
- Utilization of standard ETL processes to consume data from a variety of source types, such as direct SQL, HL7 v2, CCDA, and flat files.
- The frequency of the ETL processing will be designed and mutually agreed upon as part of the implementation for each source system.
- Data is generally refreshed daily with subsets of the processes refreshing more or less frequently as needed.
- The infrastructure accommodates for ETL processes to not impact reporting users when the ETL process is in progress.

IN047

The Vendor should provide the ability for authorized solution users to reset passwords through a self-service password reset option.

The HealtheIntent Platform utilizes a federated security model and leverages Security Assertion Markup Language (SAML) 2.0 or OPENID 2.0 for authentication. The password reset workflow is defined by the existing Identity Service Provider (IdP). Using HealtheIntent's federated security model enables users to be maintained centrally and a single sign in grants access to multiple applications. With this federated approach, HealtheIntent typically leverages the authentication system already in place and an available self-service password reset option. If DHHR does not have an existing IdP, Cerner can provide one.

IN048

The Vendor should provide the ability for authorized solution users to self-report issues with solution components as an alternative to calling for support.

The support link (www.Cerner.com) leads to Cerner's Web Applications page. Here, authorized users access eService to report and track issues.

IN049

The Vendor should define and document a process by which the Department and Vendor define new/ desired solution features and/or functionality.

As part of our HealtheIntent offering, DHHR will have access to our uCern collaboration pages to discuss new desired solution features and functionality with our Cerner Intellectual Property teams and other clients.

IN050

The Vendor should provide the ability to participate in an online discussion forum to share information related to the solution including, but not limited to:

The HealtheIntent Platform includes our uCern collaboration pages. These resources are maintained and updated continually to facilitate the sharing of information between DHHR, Cerner clients, and Cerner associates.

IN051

Post inquiries

Users post inquiries on our uCern collaboration pages. Today, nearly 5,000 customer organizations collaborate in uCern through nearly 600,000 discussions, 260,000 shared documents, 42,000, blog posts and 13,700 tutorial videos.



IN052 Respond to other participants

Users respond to other participants on our uCern collaboration pages.

IN053 Create topical threads on problems

Users create topical threads on problems on our uCern collaboration pages.

IN054 Moderate the posts and threads

Users moderate and monitor the posts and threads they utilize on our uCern collaboration pages.

IN055 Search posts and threads by date or relevance

Users search posts and threads by date, relevance and keywords on our uCern collaboration pages.

IN056 Others as defined by the department

Users will utilize our uCern website for collaboration with other DHHR users, the Department partners and with the Cerner community.

IN057 The Vendor should provide a schedule for updating solution hardware and software. Cerner will update the solution hardware and software as part of our SaaS delivery model. Cerner's maintenance of the system is performed on a rolling timeline with minimal impact to end users. Cerner will utilize the Cerner Status Dashboard notification process when downtime

is required for updates.

The Vendor should develop, implement, and maintain standards for software installation in coordination with the Department to streamline the installation and maintenance of software.

Cerner will update the solution software as part of our SaaS delivery model. Cerner's maintenance of the system is done in a rolling fashion when Cerner expects changes will not impact end users Cerner will utilize the Cerner Status Dashboard notification process when downtime is required.

The Vendor should handle scheduled or on-demand requests to refresh the data from production with a full or referentially intact subset of data within two (2) business days

The refresh of production data to various environments is achievable within two business days with coordination between Cerner and DHHR. The data syndication process is executable from production to systems/environments on a regular basis. The solutions also accommodate for ad hoc data syndication for instances where the data is needed on demand.

The Vendor should monitor network availability, throughput, bandwidth, response time, and network congestion between authorized solution users and the solution.

Performance monitoring and remediation including external bandwidth service to DHHR facilities, response time and network congestion is Cerner's responsibility as part of our SaaS offering. Our partnership with AWS includes an AWS dashboard that Cerner engineers monitor for performance, but the Department will not have access to these reports. The Internet Service Provider for internet monitoring at DHHR facilities and remote locations will be the responsibility of the Department.



IN061

The Vendor should supply the Department with recommendations to develop the solution to support new industry standards, features, and/or functionality as needed.

The HealtheIntent Platform and solutions deliver the capabilities DHHR needs, in alignment with CMS guidelines, to foster innovation and remain agile. Advanced data warehouse capabilities, data visualization, and analytics capacity support alignment with national standards and CMS reporting. Quality controls along with privacy and security processes take advantage of the latest information technology (IT) capabilities (i.e. cloud, cyber security, big data). These investments offer the Department an opportunity to integrate disparate data sources at an unprecedented level. This integration is necessary and foundational to creating an expanded and holistic view of the Medicaid members DHHR serves. As we continue to invest in our product offerings, the Department reaps the rewards of a continually enhanced solution. Capabilities have been road mapped to achieve MITA level 4 and 5 for the Medicaid SaaS offering. Congruent to reaching goal maturity levels for all business processes, our solution is a platform to support enhanced process improvement through data aggregation across many sources, data standardization/normalization, and providing robust reporting to monitor the effectiveness of the program. Cerner APIs allow outside applications to be integrated with the HealtheIntent Platform.

IN062

The Vendor should test and troubleshoot interfaces with other contractors or vendors for information exchange.

The HealtheIntent Platform undergoes a DataWorks onboarding process when interfacing with vendors or information exchanges. We provide platform support for the ingestion of data and operations support for connected sources. As part of the ETL development, any issues to interfaces would be re-tested for a successful connection and corrections made to any errors causing an unsuccessful connection to our platform.

IN063

The Vendor should provide a data access component that works efficiently in the enterprise data solution (EDS) environment.

The following is an overview of the various components available for data access fin the EDS environment.

SAP BusinessObjects—Provides a visual drag-and-drop interface to support robust custom reporting. It allows users to create queries on the fly; introduce formulas and new variables to existing objects; and aggregate, filter, and group by desired elements. With SAP BusinessObjects, the Department can maximize data value and achieve new insights through visual presentations of enterprise-wide data and ad hoc reporting. Common use cases vary from tracking summary Key Performance Indicators (KPIs) to gathering detailed data on a particular population.

Tableau—Supports data discovery and interactive visualizations, allowing users to interact with data (10M+ row data sets) rather than viewing a static report. Tableau is typically used for quick prototyping and interactive data exploration. It presents large amounts of data through concise, interactive data visualization and enables users to choose from a variety of formats such as trend lines, histograms, or tree maps to align their visualization to the most compelling view of the data.

API—Cerner's API management and governance practices allow other entities to easily interact with our solution. Cerner's architecture is designed with open and interoperable Platforms that integrate with other systems to connect clinical, operational, and financial data across the



ecosystem. The Cerner Open Developer Experience (CODE) expose standards that make it possible to connect applications or easily transfer discrete data that is used to empower organizations, people, and communities.

HealtheData Lab—Cerner HealtheDataLab with HealtheEDW exposes normalized data from a client's own HealtheIntent Platform tenant into a pre-formatted data model to support research, data science, and clinical intelligence initiatives. Cerner exposes this data with the help of ondemand cloud computing Platforms that enable clients' elastic storage and computing power to support both localized and enterprise-wide analysis for all modeling needs at scale.

SQL—The HealtheIntent Platform includes the use of a SQL for the retrieval and extraction of information from a database by enabling users to create their own data sets from existing data, create their own data models, and write their own queries using free-hand. The SQL Query writer supports query development at a simple, complex, advanced, and sophisticated analytic reporting level that helps end users view and understand their data. HealtheEDW is designed to manage large, rapidly expanding volumes of data and provide fast query performance for data warehouses and other query-intensive applications.

IN064

The Vendor should provide a data access component that allows for integration with tools in current or future use by the Department including, but not limited to:

The HealtheIntent Platform utilizes many tools that are integrated into our platform including BusinessObjects, Tableau, Microsoft Word®, Microsoft Access®, Microsoft Project®, and Cognos®. We utilize Word®, Excel® and PDF formats into and out of our solutions. When a flat file is used, exports are ingestible by Microsoft Project®, Microsoft Access® and Cognos®. We also have API capabilities to assist with Department needs as they arise.

IN065 Microsoft Project

The HealtheIntent Platform supports integration with Microsoft Project® including the ability ingest and extract flat files.

IN066

Microsoft Word

The HealtheIntent Platform supports Microsoft Word® exports.

IN067

Microsoft Excel

The HealtheIntent Platform supports integration with Microsoft Excel®.

IN068

Portable Document Format (PDF)

The HealtheIntent Platform supports PDF exports.

IN069

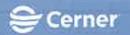
Microsoft Access

The HealtheIntent Platform supports integration with Microsoft Access® including the ability ingest and extract flat files.

IN070

Cognos

The HealtheIntent Platform supports integration with Cognos including the ability ingest and extract flat files.



IN071

Tableau

The HealtheIntent Platform supports integration with Tableau.

IN072

Others as defined by the Department

The HealtheIntent Platform produces flat file extracts to help DHHR with connecting to thirdparty applications. Cerner is evaluating new technologies based on industry trends to keep the Department up to date on new technology capabilities.

IN073

The Vendor should describe and document in the Security, Privacy, and Confidentiality Plan the proposed approach to hosting and operating the solution including, but not limited to, production and back-up systems in a secure environment.

Cerner provides detailed information about security, availability and confidentiality for our hosted environment in our SOC reports. These are obtained directly from Cerner. Security, Availability, and Confidentiality topics focused on the facility are obtained directly from AWS through their SOC reports. Cerner is not able to provide these types of SOC reports directly to clients on account of strict confidentiality clauses. The AWS SOC 1 and SOC 2 are available to customers by using AWS Artifact, a self-service portal for on-demand access to AWS compliance reports. AWS Artifact in the AWS Management Console Getting Started with AWS Artifact.

IN074

The Vendor should describe and document the operating platform including, but not limited to:

As part of our SaaS offering, Cerner will provide the operating platform for the HealtheIntent Platform. Cerner will be happy to discuss other operational concerns as they are identified Cerner understands that DHHR's business needs are ever-changing and Cerner will work with you to address those needs in good faith as those needs arise.

IN075

Hardware

As part of our SaaS based offering, Cerner will manage the hardware in partnership with AWS. Hardware management services include; scaling the hardware to meet performance requirements outlined in the sales agreement, 24/7 monitoring, and continual hardware optimization. Cerner has a long history providing Best in KLAS hosting services and AWS is responsible for managing millions of hardware devices required to run its cloud and has the expertise and channels to maintain optimization and reliability.

IN076

**Databases** 

As part of our SaaS based offering, the database will be maintained and updated by Cerner. Cerner supports a variety of database platforms in support of big data, evaluated on a continual bases to best meet the needs of our clients. Currently at the core we use a massively parallel processing (MPP) Vertica database.

**IN077** 

System software

As part of our SaaS based offering, Cerner will be responsible for the maintenance of system software. We use standard operating systems such as Windows Server and Red Hat Enterprise Linux (RHEL). Software is continually evaluated and tested for incorporation in support of providing the optimal experience for our clients.

IN078

Application software



The HealtheIntent Platform utilizes BusinessObjects, Tableau, HealtheAnalytics, SQL and HealtheDataLab for application software. We continually evaluate and augment our technologies to provide optimal end user experience.

#### IN079 Telec

**Telecommunications** 

Cerner cloud system solutions are hosted by AWS, powering the future of telecommunications. Leading communications service providers (CSPs) run more workloads on AWS than any other cloud provider. All Availability Zones are designed with redundancies to ensure system functionality even in the case of local disruption or failure. The Department is responsible for all ISP connections to the internet for their end users and facilities.

#### IN080

Others as defined by the Department.

Cerner will be happy to discuss other operational concerns as they are identified Cerner understands that DHHR's business needs are ever-changing and Cerner will work with you to address those needs in good faith as those needs arise.

## IN081

The Vendor should describe and document how the platform is shared and how the Department's data is partitioned from other customers' data.

Cerner carefully manages client data. Our security encompasses safeguarding against the inappropriate use of information, unauthorized changes to information, and the lack of availability of information. We ensure our security in our technologies, processes, and physical access. Data is carefully maintained and never shared between clients and access is not provided without reason for the access. Security includes system and application software protection from attack or inappropriate access and careful administration of passwords and user accounts. We employ least privilege and role-based access controls that provide access to information at a task level. We restrict access to only the information required to perform a user's given job functions. Each client's data is logically separated from other clients' data. Any access to data requires authentication and an authorization check. This is true of access by humans or systems. Associates are authenticated by their credentials. Systems, however, are authenticated via cryptographically strong system accounts.

### IN082

The Vendor should document and describe the operational support of the solution including, not limited to:

Cerner's dedicated Operations team will provide operational support for all aspects of the HealtheIntent Platform and solutions that make up West Virginias EDS module including those specifically outlined in the next requirements IN083-IN088. For more details, please refer to Attachment J: Maintenance and Operations Specifications located in the technical proposal.

# IN083

Disaster recovery

Cerner provides a highly available and redundant environment capable of withstanding a single component failure while meeting contracted service level agreements. In the event of multiple failures of the same component type Cerner will make commercially reasonable efforts to repair or replace the failed components and return the affected service(s) to normal operation. If a catastrophic incident occurs, Cerner follows an established, exercised and documented contingency program aligned with process, execution and methodology based on industry best practices and guidelines such as:

- ISO® 22301 Business Continuity Management standard
- Disaster Recovery Institute International (DRII)



- National Fire Protection Association (NFPA 1600)
- Federal Continuity Directive 1
- Federal Emergency Management Agency (FEMA)

### IN084 Data/system back-up

The HealtheIntent Platform infrastructure is built around AWS Availability Zones (AZs). AZs consist of one or more discrete data centers, each with redundant power, networking, and connectivity and housed in separate facilities. These AZs provide the ability to operate production applications and databases that are more highly available, fault tolerant, and scalable. The backup and restore architecture use short-term backups on disk and long- term backups online (at one of the alternative AZs). This allows for two copies of backups to be available during critical times, providing redundancy and data corruption protection. Full data backups are performed weekly, with incremental backups performed nightly.

### IN085 Staffing and management of data center

Our SaaS deliver model is a cloud solution hosted by AWS who provide the physical layer for managing the facility and hardware. Cerner engineering teams are responsible for platform management of HealtheIntent applications.

### IN086 Data loading

Cerner's data quality monitoring services consist of both automated and manual capabilities to ensure that data received at initial load and on a day-to-day basis are reliable. The HealtheIntent Platform runs this data against multiple algorithms to validate data volume, quality, and integrity. Automated data validation routines ensure data loaded is consistent and complete as compared to balance files. For example, we identify if a file is missing, if a row or column count is off, if volume trending is abnormally up/down, null values, invalid codified values (e.g., "zz10" is not a valid ICD 10 code), improperly formatted data (e.g., text received for a numeric field), suspect data (e.g., a claim dated 2023), integrity checks (e.g., a claim service line without a parent claim header line), and many other claims, enrollment, and clinical source checks.

Records that pass validation proceed with processing. Records that fail validation are monitored alongside other system and quality checks to allow for follow-up. We provide alerts for critical issues and disregard the suspect data to prevent it from impacting production reports. To include or exclude additional records, we reprocess the platform at any time.

Records are centrally monitored via a quality dashboard to quickly identify problems, trending, and resolution. The quality dashboard is monitored by a Cerner team that provides services to evaluate issues as they arise. For example, if a file was not received, we send a message to the source system requesting the data, and tag that email in a Service Request to track ongoing resolution. To prevent alert overload, our services team provides a deeper level of assessment with human interaction and evaluation. The Cerner team will review issues and initiate appropriate procedures, e.g., Service Request tracking. Critical issues are targeted for automated alerting and messages.

We provide a library of over 150 quality checks and we continually add to this number. Our clients share these benefits as we add new checks and incorporate enhancements across our solution. As part of our implementation strategy, Cerner will conduct strategy sessions,



recommend best practices based on our experience, and work with DHHR to prioritize the data validation crucial to your success.

IN087 Data validation

Cerner's Operations Monitoring team will validate incoming data to the HealtheIntent Platform. Any issues that are found during the data validation phases will be tracked on our eService ticketing service to provide transparency to the Department.

IN088 Data cleansing for the proposed solution

Cerner's Operations Monitoring team will complete the standardization and normalization process of the HealtheIntent Platform. The solutions are continually updated and monitored for data cleansing purposes. Please see response IN086 response for more details.

IN089 Others as defined by the Department

We understand that DHHR's business needs are ever-changing. Cerner will work with you to address those needs in good faith as those needs arise.

The Vendor should describe its approach for installing the technical infrastructure, making any facility alterations (including upgrades), and establishing necessary telecommunications links in the Security, Privacy, and Confidentiality Plan.

Cerner will be responsible for relevant technical infrastructure including the facility alterations necessary to operate our solutions. Our partnership with AWS to host our SaaS solution dictates that changes to technical infrastructure will follow joint agreement between AWS and Cerner.

The Vendor should provide a site that fully supports all physical needs of the solution including, but not limited to:

Cerner is proposing a SaaS managed by Cerner engineers and hosted by AWS. The physical needs of the solution will be completed by Cerner and AWS.

IN092 Hardware

We are proposing a SaaS solution. Cerner will therefore be responsible and support the back end supporting hardware in partnership with AWS.

IN093 Electrical

We are proposing a SaaS solution. Cerner will therefore be responsible and support the back end supporting hardware in partnership with AWS.

IN094 Cabling

We are proposing a SaaS solution. Cerner will therefore be responsible and support the back end supporting hardware in partnership with AWS.

IN095 All other physical needs of the system

We are proposing a SaaS solution. Cerner will therefore be responsible and support the back end supporting hardware in partnership with AWS.

IN096 Others as defined by the Department



Cerner understands that DHHR's business needs are ever-changing and Cerner will work with the Department and its stakeholders to address those needs in good faith as they arise.

IN097

The Vendor should ensure all component hardware supporting the solution database structures contain an adequate number of parallel threads for authorized solution user needs.

The HealtheIntent Platform utilizes a cloud infrastructure that is scaled to accommodate the required number of concurrent users in accordance with the SLA. The platform is designed for scalability and performance. Cerner has experience supporting clients with over 50,000 users.

IN098

The Vendor should ensure bandwidth between data acquisition and the solution database servers supports refreshes of the solution database with minimal disruption.

Cerner will provide adequate bandwidth for all internal hosting processes. As of Q4 2019, Cerner currently has 3337 nodes which have processed or stored over 20 PiB of data.

IN099

The Vendor should ensure solution hardware and software is compatible with internet browsers including, but not limited to:

The HealtheIntent Platform is a cloud-based offering and the solutions are accessed via the web using standard browsers, such as Chrome<sup>®</sup>, Firefox<sup>®</sup>, Internet Explorer<sup>®</sup>, and Safari<sup>®</sup>. Internet connectivity is the main requirement.

IN100

Microsoft and Apple products

The HealtheIntent Platform is compatible with the current versions of Microsoft® and Apple® desktop operating systems currently supported by their vendors.

IN101

Google Chrome

The HealtheIntent Platform is certified on the current and previous version of Google Chrome®.

IN102

Firefox

The HealtheIntent Platform is certified on the current and previous version of Mozilla Firefox®.

IN103

Internet Explorer (IE 7 or greater)

The HealtheIntent Platform is certified on the current and previous version of Internet Explorer®.

IN104

Others as defined by the Department

The HealtheIntent Platform solutions comprise a cloud-based offering. These solutions are accessed via the web using standard browsers, such as Chrome®, Firefox®, Internet Explorer®, and Safari. Internet connectivity is the main requirement. Cerner understands that DHHR's business needs are ever-changing and Cerner will work with you to address those needs in good faith as those needs arise.

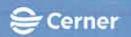
IN105

The Vendor should ensure hardware and operating systems are certified with recent major versions (1.0, 2.0, etc.) of the solution software.

The HealtheIntent Platform hardware and software are maintained and managed by Cerner. As such, the supporting hardware and operating systems are certified on the most recent version of the solution software.

IN106

The Vendor should maintain compatibility with hardware and software for the term of the contract.



The Cerner Platform will be supported by Cerner and will maintain compatibility with our partner hardware and software suppliers through the life of the contract.

IN107

The Vendor should provide the Department with an inventory of all solution hardware and software.

As we are proposing a cloud solution hosted by AWS, Cerner manages the required resources and software, but inventory control and hardware is managed by AWS. As such, Cerner deems requirement IN107 as not applicable based on our SaaS solution offering.

IN108

The Vendor should coordinate and communicate in writing with the Department regarding the delivery, installation, repair, and maintenance of hardware updates, upgrades, and patches.

As we are proposing a SaaS delivery model, Cerner will communicate via the Cerner Status Dashboard system maintenance activities that will affect end-users. Due to our SaaS model, we will be unable to coordinate with DHHR for maintenance activities.

IN109

The Vendor should coordinate and communicate in writing with the Department regarding the delivery, installation, repair, and maintenance of software updates, upgrades, and patches.

As we are proposing a SaaS delivery model, Cerner will communicate to the Department, via the Cerner Status Dashboard, system maintenance activities that will affect end-users. Changes that do not affect end user activity are generally not communicated and occur on an ongoing basis.

IN110

The Vendor should provide server and storage hardware with the proven ability to support the processor, memory, input/output subsystem bandwidth, and storage for the solution.

As part of our SaaS delivery model, Cerner will provide the appropriate server and storage hardware, in partnership with AWS, to support processor, memory, input/output subsystem bandwidth. Cerner will also supply storage for the solution to meet SLA requirements. As of Q4 2019, we currently manage 3337 nodes which have processed or stored over 20 PiB of data. According to Forbes, AWS is the world leader in cloud data management, holding nearly half of all cloud Infrastructure - including storage.

IN111

The Vendor should provide server and storage hardware with the capacity to handle the average and peak demands of the authorized solution user community with no performance degradation.

As part of our SaaS delivery model, Cerner monitors the system (including storage hardware) 24/7 for peak performance. Adjustments are made to the system when necessary in near real-time without affecting end users. Cerner accounts for large spikes in system usage as part of our planning process. Part of this process includes setting thresholds when reached set actions to adjust and rescale the system. For example; a target CPU usage might be set at 20% for normal operations. Peak usage might increase the CPUs to 40%. When we see normal operations increate CPU usage to 30% or Peak to 60% our operations team would be alerted, and we would scale the system to baseline the system back to 20% normal operations and 40% peak. With Cerner monitoring and management, end users should always have a consistent and reliable experience.

IN112

The Vendor should provide component hardware supporting the solution that has a proven record that is comparable to the Department's needs.

As part of our SaaS based offering, Cerner will manage the hardware in partnership with AWS. AWS is responsible for managing millions of hardware devices required to run its cloud and has the expertise and channels to maintain optimization and reliability for all its hosted solutions.



IN113

The Vendor should install, configure, enhance, and maintain all hardware and software and should provide services for the Vendor's local area network (LAN) up to the point of connection with the Department's wireless area network (WAN) and LAN network.

Cerner, in partnership with AWS, provides and manages the hardware and software necessary for internal networking as well as connections from the AWS Availability Zone to the WAN. DHHR will be responsible for its own connection to the WAN.

IN114

The Vendor should establish agreements with telecommunications network vendors to install secure data lines to its data center.

Cerner's connection to AWS utilizes a core data line and redundant internet providers for telecommunications to AWS Availability Zones. Cerner will work in conjunction with AWS to meet telecommunications needs.

IN115

The Vendor should provide and maintain servers.

Cerner is responsible for the supporting system. In partnership with AWS, Cerner will manage and maintain all servers. Cerner updates the needs of clients on demand with assistance from AWS. Cerner's set of engineers are constantly monitoring servers for usage and when additional servers need to be added. Cerner will work with AWS to perform these additions seamlessly without impacting Department users. As of Q4 2019, Cerner currently has 3337 nodes which have processed or stored over 20 PiB of data.

IN116

The Vendor should provide and maintain applications, web pages, and secure sockets layer (SSL) devices to support hypertext transfer protocol security (HTTPS).

Cerner will provide and manage the security elements required to maintain applications, web pages, and secure sockets layer (SSL) devices. When necessary, this will include HTTPS web certificates.

IN117

The Vendor should submit the proposed plans for all connections to the network to the Department for its review and approval prior to implementation.

DHHR will control decisions regarding outside entity access to the HealtheIntent Platform via API's. Any unapproved entity will not have access to the Department data.

IN118

The Vendor should ensure authorized solution users are able to access the network and any necessary equipment located in the Vendor's data center from the Department's facilities.

Cerner is responsible for network connectivity at the hosting facility site. Cerner also manages the web presentation services that allow end users to connect over the internet to our applications. DHHR is responsible for its subscriber's internet connections. For authorization to application services, Cerner federates with a client's existing identity providers through open Web protocols; such as the SAML to support user authentication and SSO.

IN119

The Vendor should ensure that authorized solution users have the ability to access the solution environments remotely.

DHHR users will require an internet connection to access our HealtheIntent applications and tools.

IN120

The Vendor should have the ability to provide a firewall solution and proxies between its private network and the connection to the Department's network.



As part of our SaaS offering, there will be no direct connectivity between DHHR network and Cerner network. A secure tunnel will be established over the web to provide connections for the Department users to the HealtheIntent applications and tools.

IN121

The Vendor should have a firewall solution and proxies in accordance with Department, State, and federal requirements.

Perimeter network and critical infrastructure connections are protected by industry standard network firewall technologies. External application access across public networks is scanned for worms and viruses prior to establishing the connection with the destination server. Outbound web and FTP requests are filtered against an authorized list and scanned for worms and viruses.

IN122

The Vendor should allow Department authorized solution users access into the Vendor facilities.

We partner with AWS for our cloud hosting model. Cerner cannot permit DHHR access into AWS facilities.

IN123

The Vendor should provide network support for the solution that handles a minimum of 75 authorized solution users.

Cerner will provide the network support for the solution to handle a minimum of 75 authorized solution users in accordance with the SLA.

IN124

The Vendor should provide network support for the solution that handles 40 authorized solution users accessing the system concurrently.

Cerner will provide the network support for the solution to handle a minimum of 40 authorized solution users in accordance with the SLA.

IN125

The Vendor should provide network support for the solution that handles ten percent (10%) growth per year in the total number of authorized solution users and concurrent authorized solution users.

As part of our SLA process during contract negotiations, a 10% growth per year is possible to accommodate. Additional licensing fees may apply to adding additional users over time.

IN126

The Vendor should assist in the resolution of solution-related issues.

Cerner utilizes eService, an online trouble-ticket system. eService allows user to log and track Service Requests from any approved device and at any time. We offer support services through various access points including eService, and Cerner Support, and self-help. Cerner maintains a support team that is available during all state business days, 8 a.m. ET to 5 p.m. ET for the HealtheIntent Platform and applications. Cerner Support is available to assist users in researching problems, reviewing production outputs, and understanding report formats.

Critical support is also available via phone 24 hours per day, 7 days a week, 365 days per year where a resource responds to the critical issues immediately within the Immediate Response Center (IRC). The IRC is committed to providing clients with the fastest possible solution or workaround to any critical issue that impairs the immediate operation of our system. A critical issue is defined as an issue that impacts system operations or causes financial or operational issues. The IRC engages necessary resources to ensure the issue is addressed as quickly as possible in accordance with mutually agreed upon SLAs. Cerner will respond to high and critical priority issues logged via phone within fifteen (15) minutes.



IN127

The Vendor should manage versions, acquire associated software patches and fixes, apply fixes, and test all applied fixes.

Cerner will manage the versions, software patches and fixes, apply the fixes and test all applied fixes. Cerner maintains an automated system inventory and patching system providing visibility to system changes. Cerner obtains up-to-date patch notification through its partner relationships and tests patches using various processes prior to applying the patches within the applicable platform.

IN128

The Vendor should assist with analysis of Department requests for new software and hardware for appropriateness to the overall solution and architecture.

As part of SaaS offering, Cerner manages all required hardware and software platform on the cloud. Core hardware and software is updated throughout the lifecycle of the contract to facilitate leading edge security, performance and functionality. We also have dedicated engineering teams responsible for developing new features for HealtheEDW every year which will available for DHHR to utilize if desired. New development is based on industry trends and feedback from our client base. In addition to new development, we expose APIs so that DHHR can use other 3rd party technology should the need arise.

IN129

The Vendor should develop and maintain an inventory of software including, but not limited to:

Cerner will develop and maintain an inventory of all software as part of our SaaS offering.

IN130

Active versions

As part of our SaaS offering, Cerner maintains the Active Versions of the solution for internal tracking purposes.

IN131

Licensing requirements

As part of our SaaS offering, Cerner maintains the licensing requirements of the solution to run the web-based application. Some users will elect to utilize Tableau Desktop and other API programs that would require additional licensing.

IN132

Interdependencies to assist with overall management of software upgrades

As part of our SaaS offering, Cerner maintains software upgrades of the solution for internal tracking purposes.

IN133

Others as defined by the Department

Cerner will maintain an inventory of all software for internal tracking purposes.

IN134

The Vendor should develop and implement standards for software installation including, but not limited to:

Our SaaS offering follows agile methodology throughout the SDLC. Cerner uses state of the art automated architecture which not only allows software packages to be released seamlessly into various environments such as dev, staging and production but also ensures quality code being deployed through robust validations against multitude of test scenarios. As part of SaaS offering, flexible software architecture is designed which enable clients to easily customize their configurations on reliable underlying platform.

IN135

Data set names



As part of Cerner SaaS platform, we design and build standard set of data dictionaries, tables and associated reports. All our new product development, platform enhancements and configuration updates will ensure the respective data sets being reflected with new software changes via SDLC without any interruption to the clients.

### IN136 Architecture names

As part of Cerner SaaS offering, we design, develop and maintain all the platform related architectures and the associated underlying software to support client specific configurations. Cerner architecture follows heavily on micro services techniques to de-link the dependencies, increase optimization and efficiencies in the overall process. We also utilize containerization techniques to package the underlying SaaS software that can be shipped and deployed easily on cloud based, hybrid or on-prem hardware/operating systems. Cerner SaaS build process follows automated methodologies to promote and deploy the thoroughly tested, reliable and high-quality packaged software into dev, staging and production environments. Cerner will support and help seamless connection and client specific operations on our SaaS platform.

### IN137 Volume names to streamline installation and maintenance of software

As part of Cerner's SaaS offering, we maintain version controls of the code base and release marking for packaging deployable software into various environments such as dev, staging and production. Cerner follows industry standards and proper approval processes to track the software development and automated deployments. Our SaaS platform undergoes extensive validations in delivering quality and reliable code in production.

# IN138 Others as defined by the Department

As part of Cerner SaaS platform, we develop and manage all software to support client specific configurations. The platform is also configurable to meet many client specific needs/requirements in the future.

# IN139 The Vendor should manage scheduling of operating system upgrades to accommodate processing schedules and system availability needs of the Department.

Cerner will update the solution hardware and software as part of our SaaS delivery model. Cerner's maintenance of the system is done behind the scenes in a rolling fashion when there is not an expected impact to users. Cerner will utilize the Cerner Status Dashboard notification process when downtime is required. Defects to hardware and software identified by Cerner will be changed in near real-time to limit the identified defect before it becomes an impact to endusers.

# The Vendor should provide a plan for the physical security of the solution facilities including, but not limited to these topics:

Cerner is in partnership with AWS for our cloud hosting model. AWS maintains responsibility for the security of the Cloud, including physical security at its data centers, while Cerner is responsible for ensuring the solutions in the cloud meet leading standard practices. Cerner looks forward to reviewing these details with you during further discussions.

### IN141 Designated responsible person(s)

Cerner's Chief Information Security Officer oversees the Enterprise Security organization, which is responsible for maintaining security policies and procedures, including oversight of third parties providing cloud services. Cerner's partnership with AWS ensures that their policies are in alignment with Cerner's.



IN142 Defined perimeter and protocols for secure access

Cerner configures perimeter and protocols for secure access using tooling provided by AWS.

IN143 Security of the communication network and solution components

The security of the communication network and solution components is maintained by Cerner in partnership with AWS.

IN144 Administrative controls

AWS will provide the administrative controls to our Cerner Engineers. Cerner engineers will then utilize the administrative tools provided by AWS to manage and maintain the HealtheIntent Platform.

The Vendor should provide and maintain encrypted network connections that align with State, federal, and Department requirements.

Cerner uses proper encryption mechanisms to safeguard data. Cerner performs risk assessments to evaluate how the data is being consumed and the overall sensitivity of the data. Data is encrypted in transmission between the client and Cerner and at rest within AWS. Cerner manages client network public and private key infrastructure. Cerner strives to use FIPS 140-2 algorithms when supported by the cryptographic module. Cerner also supports Advanced Encryption Standard (AES) and Transport Layer Security (TLS) encryption protocols.

The solution should prioritize business intelligence data retrieval over batch extract, transform, load (ETL) processes.

The i2iLinks<sup>™</sup> application can control and execute all aspects of the ETL process. Our solutions utilize standard ETL processes to consume data from a variety of source types such as direct SQL, HL7 v2, CCDA, and flat files. The frequency of the ETL processing will be designed and mutually agreed upon as part of the implementation for each source system. Data is generally refreshed daily with subsets of the processes refreshing more or less frequently, as needed.

At the onset of the data source event, all activity will follow the mutually agreed upon design priority to reflect business intelligence data retrieval as priority over batch extract, transform, load (ETL) processes. As data is loaded into our Business Intelligence infrastructure, the ETL process is coordinated to have limited impact on Business Intelligence users. One approach utilizes separate Hadoop hardware to process the ETL. When data does need to be written to the database storage, data loads are given lower priority. These priority settings are an embedded feature of the database storage, which allows Cerner to prioritize end user workflows over ETL.

IN147 The Vendor should describe and maintain the solution's interface design in interface control documents that are readily available to authorized solution users.

The implementation of our HealtheIntent Platform applications will include online interface control documents detailing source data and where it goes within the Cerner system. These documents are stored online and accessible by authorized DHHR users.

The solution should have a web-based browser interface that provides seamless integration to the full solution for authorized solution users.

We provide a web-based browser interface for seamless integration to the full solution for authorized solution users.



IN149 The solution network architecture, network hardware, and software should be compliant with:

The HealtheIntent Platform meets appropriate network architecture, network hardware and software as it relates to our defined industry regulations.

IN150 All policies and procedures issued by the West Virginia Office of Technology (WVOT)

Cerner has comprehensive security and privacy policies and procedures, as outlined at www.cerner.com/security, to meet the security and privacy needs of all of our clients. We look forward to discussing during contract negotiations how our foundational policies maintain a secure, consistent environment that align with the State's goals.

Our policies are based on guidance from HIPAA, NIST 800-53, NIST CSF and ISO® 27001 standards and frameworks, and an overview is available at Cerner.com/Security. Additionally, the State may view Cerner's security policies and procedures, excluding any that may risk Cerner's ability to main the privacy and security of the environment if released, as determined by Cerner in its sole but reasonable discretion.

IN151

National Institute of Standards and Technology (NIST) Special Publication 800-53, or the most recent NIST publication

Industry standards and regulations (e.g. NIST/FIPS, ISO®, HITRUST, HIPAA) are constantly evolving and therefore, compliance with such regulations and alignment to the standards is a continual process. Cerner commits to work in good faith to review changes to industry standards and regulations, assess their impact, and if applicable determine and effect the steps necessary for compliance.

IN152

Applicable requirements under the Office of the National Coordinator for Health Information Technology (ONC) certification criteria for electronic health record technology

The HealtheIntent Platform currently meets applicable requirements under the ONC certification criteria for electronic health record technology.

IN153 Others as defined by the Department

Cerner understands that DHHR's business needs are ever-changing and Cerner will work with you to address those needs in good faith as those needs arise.

IN154 The solution should have open application programming interfaces (APIs).

The HealtheIntent Platform open development services allow access to population health concepts using RESTful APIs. Central to the Cerner approach is the ability to accept data in a variety of formats and transform via standardization, normalization and person matching. This approach still allows flexibility to include data types and structures to meet DHHR's unique use cases while structuring the data for reuse over the course of the engagement. This reuse facilitates content developed with HealtheEDW as well as use of that data by systems leveraging the APIs. Our API's assist DHHR in connecting to several different EHR vendors making DHHR more effective in alternative payment contracts for better outcomes and increase financial incentives.

IN155

The Vendor should ensure that backups of reports and queries performed by authorized solution users are stored on a single shared drive in the solution.

Cerner's solution is a SaaS offering in a shared cloud environment. Access to reports by approved users may share or transmit report information at their discretion. Locally saved



reports are not required as these are stored in our cloud network. Should hardware fail, Availability Zones would activate, and the report information would not be lost.

IN156

The solution should leverage existing Department systems to achieve the desired to-be environment detailed within this Request for Proposal (RFP).

Our solutions are web-based and accessed anywhere to best accommodate the preferred workflow of the Department user. We do not anticipate that it will be necessary to reuse the Department's existing systems.

IN157

The solution should leverage existing Department services to achieve the desired to-be environment detailed within this Request for Proposal (RFP).

Our solutions are web-based and accessed anywhere to best accommodate the preferred workflow of the Department user. We do not anticipate that it will be necessary to reuse the Department's existing systems.

IN158

The solution should allow for intra- and inter-state leverage and reuse.

The HealtheIntent Platform allows for intrastate leverage and reuse by utilizing our security model to deem what content is shared with different groups. Any item that has been created by a user is shared with other stakeholders to be reused or used as templates to further establish collaboration. The HealtheIntent Platform is received and shares different data sets to other agencies via APIs as well. Our security model assists with the data going to and from an outside agency.

IN159

The solution's technical architecture should enable flexibility and adaptability to respond quickly to changing business needs or regulatory requirements.

We are strategically aligned to support DHHR as you look to solutions to better manage and engage populations. The Department will be able to utilize our existing workflows, edit existing workflows and create brand new workflows that Cerner has not encountered. We have architected the HealtheIntent Platform to aggregate, normalize, and manage data in a single, scalable platform. The HealtheIntent Platform provides an extendable platform for your organization to support and address the unique analytical, care delivery, and consumer engagement requirements to effectively manage the health of a population. The solutions provide the ability for ad hoc capabilities as they come up interpedently of Cerner to accommodate changing business needs.

Cerner differentiates our ability to deliver a complete suite of services including information technology and clinical expertise to satisfy broad reporting, analytic and strategy-setting needs for Medicaid members. As we continue to invest in our offerings, DHHR reaps the rewards of a continually enhanced solution. queries, reports, and dashboards built specifically for state Medicaid Agencies.

IN160

The solution's underlying technical hardware and software architecture should promote shared use across the enterprise, including, but not limited to:

The HealtheIntent Platform utilizes an N-Tier design of software that is scalable over time and highly available. We have deployed our HealtheIntent Platform for 170+ clients without disruption. The HealtheIntent Platform was designed in a modular approach to accommodate changes in solution functionality. If one piece of a solution needs to be replaced, the overall HealtheIntent Platform is not affected.



IN161

N-Tier service-oriented architecture (SOA), or multi-tier architecture, with multiple architecture layers enabling complete separation of the data, application, and presentation tiers

The HealtheIntent Platform utilizes an N-Tier design of software that is scalable over time and highly available. We have deployed our HealtheIntent Platform for 170+ clients without disruption. The Platform was designed in a modular approach to accommodate changes in solution functionality. If one piece of a solution needs to be replaced, the overall HealtheIntent Platform is not affected. The HealtheIntent Platform utilizes three planes of architecture to deliver our set of solutions. The first plane of our architecture, we utilize an Application plane where the solution applications, API's and BI tools function. In the middle of our architecture is the services plane, where the reference services and application services reside. The third plane is the Data & Processing Plane where database storage and Hadoop function.

The use of a three-plane architecture creates the ability to use cohesive (I.e., elements of our design belong together) and loosely coupled services (I.e., the degree of interdependence between software modules) to help manage complexity. We believe a firm understanding of cohesion and coupling are required to maintain an industry leading Medicaid Management system.

IN162

Standards-based interoperability technologies that include Web Service Definition Language (WSDL), Simple Object Access Protocol (SOAP), Extensible Markup Language (XMS), and Java

Cerner's architecture is designed with open and interoperable Platforms that integrate with other systems to connect clinical, operational, and financial data across the health care ecosystem. The Cerner Open Developer Experience (CODE) expose standards that make it possible to connect applications or easily transfer discrete data that is used to empower organizations, people, and communities.

Cerner APIs allow outside applications to be integrated with the HealtheIntent Platform through SMART Health IT and the HL7 Fast Healthcare Interoperability Resources (FHIR) standards. Simply put, FHIR provides access to data. SMART handles the negotiation between the Platform and an app to allow a user experience on top of a secure connection to the FHIR resources for data access.

IN163

Others as defined by the Department

Cerner understands that DHHR's business needs are ever-changing and Cerner will work with you to address those needs in good faith as those needs arise.

IN164

The Vendor should maintain and support data management governance, data security, and data quality to ensure all data received from the Enterprise Data Solution (EDS) Interfaces and Exchanges maintains the data's integrity throughout the Extract, Transform, Load (ETL) process.

Data governance is a necessary component for any organization and requires representation from and expertise on all data sources as well as involvement of executive leadership. When new sources of data are introduced, data governance will require executive leadership representation from that data source. The data governance body will make initial decisions about data. It will conduct ongoing evaluation of the characteristics of data in each data repository and of the characteristics of data in transit. Ongoing data governance meetings to addresses changes and evolutions of the data's characteristics are key to the success of the project.



As the provider of the SaaS offering that houses data, Cerner is responsible for receiving your data and maintaining its integrity so that it will be accurately represented in the solution. DHHR and other contributing sources maintain ownership of their respective data. For all data sources, including any legacy environments, we want a tight integration with the data. Through the Data Governance committee this tight integration is continually evaluated to assure the data ingestion frequency is appropriate, the data is appropriate, and HealtheEDW, HealtheAnalytics and HealtheRegistries accurately represents the data.

Members of the data governance body for the Department project will be identified in the Data Integration event during initiation and project kickoff. Cerner will work with the DHHR to identify additional stakeholders to participate in data governance as needed throughout the project. The data governance committee will meet on a recurring basis and the meetings will be documented in the PWP. Attributes, policies, and elements are the three groupings that make up the characteristics of data governance. Within each of these groupings there are subgroupings, attributes, policies, and elements that begin to define the characteristics of the data transport, transformation, and utilization. Further, our role-based access controls keep data secure as users will only have access to the workflows and data needed to perform their roles. The integrity of the data is enhanced as only a select number of users will have access to the ETL process.

Data ingested by the HealtheIntent Platform undergoes a data validation process to ensure data quality. Our solution includes a Data Quality Management tool. Ingested data undergoes a validation process to ensure data quality at initial historical load. That quality is maintained throughout the life of the contract. The system performs checks against incoming data sets to validate the data against the balance files. Records that fail validation are centrally monitored by Cerner to identify and evaluate issues as they arise. This team investigates, makes recommendations, corrects or resolves the issue, creates s Service Requests as needed, and works closely with DHHR to ultimately ensure resolution of the issue. For example, if a file is not received, Cerner notifies the source system requesting the data, and tags that email in a Service Request to track ongoing resolution.

The activities during the investigation and resolution process are captured and produced in data quality reports that are available to the Department within the Project Portal. With this reporting system, DHHR can clearly confirm that checks are performed, understand the conclusions, and drill down to additional information as required. Once the Service Request is logged, Cerner will work coordinate resolution with the appropriate group. For example, a late arriving file from a source will require coordinating with that source. In contrast, if the issue was due to a Cerner configuration issue, Cerner will resolve that internally.

As a member of the vendor team, i2i will comply with all services and commitments with Cerner. Per the included specifications, i2iLinks<sup>™</sup> will maintain and support data management governance, data security, and data quality to ensure all data received from the Enterprise Data Solution (EDS) Interfaces and Exchanges maintains the data's integrity throughout the Extract, Transform, Load (ETL) process.

IN165

The Vendor should ensure the data received from the Enterprise Data Solution (EDS) Interfaces and Exchanges is consistent with the Physical Data Model and Data Dictionary.

Cerner understands the importance of consistency for all documentation associated to data.

Documentation such as online Data Dictionaries with metadata, visual depictions, and hierarchy must remain pristine as the source of truth in order to manage data governance practices with



reliability and quality at their core. We will ensure all data received, regardless of source, is aligned to the associated data model documentation under scope within the West Virginia's EDS module.

IN166

The Vendor should be prepared to assist the Department with discussions as they pertain to data management, data governance, and/or data sharing.

The HealtheIntent Platform brings together claims, operational, financial, and other relevant data sources together to create new insights for DHHR. The Platform equips the state of West Virginia with the tools to provide greater insight into Medicaid members at the individual and aggregated population level, while our project team brings expertise to guide the Department throughout your journey. As previously mentioned, we have 173 clients live on the HealtheIntent Platform and experience with implementing data analytics. We offer an ongoing partnership to support DHHR as you gain visibility of your Medicaid population's health and act to improve outcomes for West Virginia. One of our key differentiators is the proactive, consultative support for helping our clients achieve their objective. Cerner's Health Network Organization has over 2,000 employees, including 400 employees devoted to R&D, 180 who focus on data analytics and 25 who solely focus on the clinical integration. The depth and breadth of the HealtheIntent Platform resources are included as part of our proposed solution. There is not an "add-on" to use the team's expertise and, in fact, we are proactive in leveraging this expertise across our organization for our clients to meet satisfaction of the users of the HealtheIntent Platform.

# 4. SECURITY MANAGEMENT

Refer to the relevant technical specifications located in Appendix 1: Detailed Specifications and pertinent narrative in Section 4: Project Specifications in this RFP to cover solution capabilities in this area. The Vendor should describe its approach to Security Management below. The narrative response for this category should be organized using the appropriate subject matter area as per Appendix 1: Detailed Specifications.

Cerner maintains a documented information privacy, security and risk management program with clearly defined roles, responsibilities, policies, and procedures that are designed to secure the information maintained on our Platforms. Cerner's SaaS service has leveraged guidance from the following authoritative sources: The National Institute of Standards and Technology (NIST) Cybersecurity Framework (CSF), NIST Special Publication 800-53, International Standards Organization (ISO®) 27001, and the Health Insurance Portability and Accountability Act (HIPAA). Utilizing standard industry frameworks, our controls are designed to use appropriate technology configurations and security protocols for protecting sensitive data. Additionally, we have designed our MMIS Modular solutions to support applicable MECT Checklist Controls. Cerner's program, at a minimum:

- Assigns data security responsibilities and accountabilities to specific individuals
- Describes acceptable use of Cerner's Platform
- Provides access control and password attributes for Cerner end users, administrators, and operating systems
- Enforces Cerner end user authentication requirements
- Describes audit logging and monitoring of Cerner-hosted production environments
- Details Cerner's incident response plan



- Describes appropriate risk management controls, security certifications and periodic risk assessments
- Describes the physical and environmental security requirements for Cerner's networks,
   CTCs, and third-party data centers

Cerner tightly controls its security policies and procedures and does not distribute them as written or electronic copies. We regularly review and modify our security program to reflect changing technology, regulations, laws, risk, industry and security practices and other business needs.

SM001

The solution should have security controls, safeguards, and alerts to prevent, monitor, and detect potential and actual violations in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.

The system includes role-based security controls and audit logs to limit and track access to data. Role-based security is highly configurable to meet a wide range of use cases. Some of the most common access controls limit access to identified data, sensitive conditions, sensitive procedures, data type (e.g. limit access to employee data) and relationship (e.g. member is on a specific wavier, lives in a specific region).

A detailed audit trail of user activities is maintained within our application auditing tool, P2Sentinel, which is a compliance tool intended to provide DHHR the capability to perform internal audits and routine monitoring. It also provides a robust, secure, reliable, and a thorough audit trail as member data is accessed. The tool is designed to help support your needs to enforce information security and privacy policies.

Cerner's auditing tool provides the ability for DHHR to audit access to member records and enables incident management through alerts notification. The solution provides functionality for DHHR to define specific rules for monitoring suspected abuse and is designed to be a proactive approach to safeguarding confidential data.

SM002

The Vendor should deliver a Security, Privacy, and Confidentiality Plan within 30 calendar days of contract startup.

We will provide an initial SSP regarding the Security of the solution within 30 days of contract startup. After the initial SSP is delivered and in response to annual submissions of the SSP, we will provide one round of updates within 30 days of review of the SSP.

SM003

The Vendor should submit an updated Security, Privacy, and Confidentiality Plan to the Department for review and approval 30 business days prior to the start of solution operations.

Cerner will provide an SSP regarding the Security of the solution. After the initial SSP is delivered and in response to annual submissions of the SSP, we will provide one round of updates within 30 days of review of the SSP. As such, Cerner is unable to comply with a review and approval process of 30 business days prior to the start of solution operations.

SM004

The Vendor should perform a review of the Security, Privacy, and Confidentiality Plan annually and submit to the Department for review and approval within 30 calendar days of the review.

Cerner will provide an SSP regarding the Security of the solution annually. After initial SSP is delivered and in response to annual submissions of the SSP, Cerner will provide one round of updates within 30 days of review of the SSP.



SM005

The Vendor should submit substantive change(s) to the Security, Privacy, and Confidentiality Plan for review and approval within 30 calendar days of the proposed change(s).

As we are proposing a SaaS solution, the Security Plan is in place today for the HealtheIntent Platform. Cerner will provide our SSP annually. After the initial SSP is delivered and in response to annual submissions of the SSP, we will provide one round of updates within 30 days of review of the SSP.

SM006

The Vendor should maintain a Department-approved Security, Privacy, and Confidentiality Plan that details how the solution complies with applicable Department, State, and federal security and privacy laws, policies, and/or procedures.

Cerner will provide an SSP regarding the Security of the solution. The SSP will utilize similar Department and state laws, policies and procedures, but the SSP will not correlate directly to specific state regulations. The HealtheIntent Platform meets federal security and privacy laws, policies and procedures specific to the technology configurations deployed for the services, Cerner must maintain structured elements and is unable to comply with specific requirements of each client's policies.

SM007

The solution should maintain an audit trail that can be used to identify unauthorized attempts to access the solution and log the IP address from where the intrusion attempt occurred, in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.

A detailed audit trail of user activities is maintained within P2Sentinel. It provides a robust, secure, reliable, and a thorough audit trail as member data is accessed. The tool is also designed to help support your needs to enforce information security and privacy policies.

Cerner's auditing tool provides the ability for DHHR to audit access to member records and enables incident management through alerts, notification. The solution provides functionality for DHHR to define specific rules for monitoring suspected abuse and is designed to be a proactive approach to safeguarding confidential data.

We provide additional physical and environmental security measures that are implemented in a strategic layered approach to deter, delay, and detect any attempted intrusion. Cerner's Computer Security Incident Response Center (CSIRC) is the control center for security incident event management and is responsible for 24x7x365 continuous threat monitoring of Cerner's Platforms. The CSIRC team ingests and coordinates responses to international, federal, and tech industry threat intelligence information, in an effort to safeguard Cerner environments. In addition, the team leverages industry standard tools to systematically analyze logs to identify potential unauthorized activity and potential threats.

SM008

The solution should provide an audit of all attempts to access or use sensitive data, consistent with Health Insurance Portability and Accountability Act (HIPAA), Centers for Medicare & Medicaid Services (CMS), and other Department, State, and federal laws and regulations

Cerner has established and maintains the necessary controls required for compliance with HIPAA, as amended by HITECH. HIPAA (internal or external) assessments take place on an annual basis and examine all appropriate corporate and client environments. P2Sentinel provides internal auditing and routine monitoring, supporting your needs for enforcing policy regarding information security and privacy. Our auditing tool supports the ability to audit accesses to the member record and enables incident management through alerting and



notification and definition of specific rules for monitoring suspected abuse, providing a proactive approach to safeguarding confidential data.

The following principles guide the creation and direction of P2Sentinel:

- Regulatory compliance—Auditing is a requirement of numerous regulations in the US and beyond and P2Sentinel is a key tool in complying with these regulations whether HIPAA, meaningful use, or Medicaid guidelines.
- Transparency—When entrusting a cloud-hosted solution with sensitive data, the user deserves to know how data is being handled, when it is accessed, and by whom. Cloud auditing provides complete transparency into all user activities that occur in the cloud whether they are DHHR users or Cerner associates
- Single audit trail for the Cerner Cloud—P2Sentinel enables all applications to feed their events into a single, common audit trail
- Cloud auditing is always on—P2Sentinel's philosophy is that auditing is always on. Unlike other auditing tools that require up-front configuration to enable auditing and specify the events of interest, P2Sentinel's strategy is to send it all
- Multi-tenancy designed in—Like all of Cerner's cloud applications, the notion of multitenancy influences the design of the system from the start. Preserving strict logical separation of different clients' data is very important

SM009

The solution should have the ability to prevent, monitor, and detect malicious software and code.

Cerner tracks access to and activity on network devices, security infrastructure components, and server systems, and monitors usage by transferring logs to a centralized repository for analysis, troubleshooting, compliance, and auditing purposes. The enterprise security logging repository, known as a Security Information and Event Management (SIEM) tool, is leveraged to analyze, monitor, and correlate log data. Using the SIEM tool, security personnel devise profiles of common events from given systems to focus on unusual activity, avoid false positives, identify anomalies, and prevent insignificant alerts. Due to the SaaS service/multi-environment model, all such logs are Cerner managed and controlled. As needed for the investigation of a security incident, we will work with DHHR and provide applicable system log information. Should we discover malicious software within the HealtheIntent tools and applications, we will report to DHHR as soon as possible.

SM010

The solution should have the ability to provide security incident reporting and mitigation mechanisms according to State and federal requirements and in accordance with the Department's Incident Reporting and Response Policy including, but not limited to:

# Immediate Response Center (IRC)

The primary duty of the IRC is to answer second and third tier support calls from client help desks and resolve reported issues. Reported issues are documented and stored in a central repository. The IRC team uses system monitoring tools to track and respond to alarms and warnings and take appropriate action. Cerner's IRC is staffed 24x7x365.

### Computer Security Incident Response Center (CSIRC)

Cerner's Computer Security Incident Response Center (CSIRC) is the control center for security incident event management and is responsible for 24x7x365 continuous threat monitoring of Cerner's Platforms. The CSIRC team ingests and coordinates responses to international, federal, and tech industry threat intelligence information, in an effort to safeguard Cerner



environments. In addition, the team leverages industry standard tools to systematically analyze logs to identify potential unauthorized activity and focus on potential threats.

## Security Incidents

Cerner maintains a security incident management process to investigate, mitigate, and communicate system security events occurring within a Platform. Impacted clients are informed of relevant security incidents in a timely manner and advised of recommended corrective measures to be taken.

SM011 Terminating access and generating a report when a potential security violation is detected Suspicious activity that could indicate a potential security violation is captured in automated reports, which trigger an alert and investigation. Additionally, the response to that alert may include terminating access. Reports remain internal to Cerner, since Cerner maintains responsibility for the security of the system.

SM012 Preserving and reporting specified audit data when a potential security violation is detected For potential security violations, we use P2Sentinel, which provides a detailed audit trail of user activities. The tool is also designed to help support your needs to enforce information security and privacy policies. Audit logs persisted in Sentinel are viewable as raw data or as reports that filter particular types of events. P2Sentinel reporting facilitates the detection of security incidents. Please refer to our response to requirement SM010.

# SM013 Others as defined by the Department

Cerner understands that DHHR's business needs are ever-changing and will work with you to address those needs in good faith as those needs arise.

SM014

The Vendor should ensure that any and all security and privacy breaches, incidents, and/or unauthorized disclosures are reported according, to State and federal requirements and in accordance with the Department's Incident Reporting and Response Policy.

Cerner has an incident reporting policy that we will follow. This encompasses the needs of our full client base. This includes:

Cerner will report to Covered Entity any use or disclosure of PHI not permitted under this Exhibit, Breach of Unsecured PHI or Security Incident, without unreasonable delay, and in any event no more than thirty (30) days following discovery; provided, however, that the Parties acknowledge and agree that this Section constitutes notice by Cerner to Covered Entity of the ongoing existence and occurrence of attempted but Unsuccessful Security Incidents (as defined below). "Unsuccessful Security Incidents" include, but are not limited to, pings and other broadcast attacks on Cerner's firewall, port scans, unsuccessful log-on attempts, denials of service and any combination of the above, so long as no such incident results in unauthorized access, use or disclosure of PHI. Cerner's notification to Covered Entity of a Breach include: (i) the identification of each individual whose Unsecured PHI has been, or is reasonably believed by Cerner to have been, accessed, acquired or disclosed during the Breach; and (ii) any particulars regarding the Breach that Covered Entity would need to include in its notification, as such particulars are identified in 45 C.F.R. § 164.404.



SM015

The solution should have the ability to log all authorized solution user activity and correlate, analyze, and report on all logged user events and associated data.

We will use P2Sentinel to track user access to confidential member data in HealtheAnalytics and HealtheEDW. Under HIPAA, provider organizations must implement a system of accountability with regards to how member information is accessed and used. The audit information includes data identifying the user, the member, the context of the access, and the actions performed to the member data, including actions that create, verify, view, modify, complete amend/error correct and print member information. DHHR will be able to view the audit logs created or create reports from the logs using the report writer for the solution.

SM016

The solution should have the ability to provide a report of authorized solution user activity as determined by the Department in the Design, Development, and Implementation (DDI) phase.

DHHR auditors can access audit logs through a web based administrative portal. The auditors can query the audit trail for their enterprise and produce detailed audit reports of user activity within HealtheEDW.

SM017

The solution should provide an audit trail of record changes, including authorized solution user, date, and time of change.

A detailed audit trail of user activities is maintained within P2Sentinel. This includes maintaining an audit trail of record changes, authorized solution user, date and time change.

SM018

The solution should have the ability for audit trails to allow information on source documents to be traced through the processing stages to the point where the information is finally recorded.

Cerner will collaborate with DHHR to perform validation compared to the legacy system. These validation tasks begin by comparing the loaded data in each system including volume and breadth validations. When issues are identified, specific examples can be located, and processes traced to determine the solution. After the legacy data is validated, individual reports will be validated as an additional check on the data and to confirm that the logic in each report was properly transferred. We use P2Sentinel to track user access to confidential member data in HealtheAnalytics and HealtheEDW.

Under HIPAA, provider organizations must implement a system of accountability with regards to how member information is accessed and used. Cerner's solution includes an enterprise level audit logging tool for tracking end user access to confidential member data enabling a capability to audit how member and other sensitive information is accessed throughout an enterprise regardless of purpose. This information includes data identifying the user, the member, the context of the access, and the actions performed to the member data, including actions that create, verify, view, modify, complete amend\error correct and print member information. DHHR will be able to view the audit logs created or create reports from the logs using the report writer for the solution.

SM019

The solution should have the ability to trace data from the final place of recording back to its source of entry.

Once data is processed in HealtheAnalytics, a source description table displays the data origin. Cerner will collaborate with DHHR to perform validation compared to the legacy system. These validation tasks begin by comparing the loaded data in each system including volume and breadth validations. Specific examples can be located as issues arise, and processes can be traced to determine the best possible solution. After the legacy data is validated, individual



reports will also be validated as an additional check on the data and to confirm that the logic in each report was properly transferred.

SM020

The solution should continuously monitor, authorize, document, and allow access only through controlled interfaces for all connections originating from outside the security boundary of the system in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.

Data is ingested into the HealtheIntent Platform through controlled API's. These API's monitor and authorize the data through Role-Based Access Controls to verify the correct data is entering the HealtheIntent Platform. A system account will be created for DHHR to assist with authorization of API's to appropriately pull in data. The HealtheIntent Platform knows what interface traffic to allow and what interfaces to block based on Cerner's boundary and firewall. We do not have control over what data is entered into the source system or DHHR's network. As we are a SaaS offering, we handle hundreds of clients and are unable to comply with individual client policies and procedures as it relates to our interfaces.

SM021

The solution should ensure remote connection is performed using multi-factor authentication in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.

As required by NIST 800-53, Cerner manage remote access through two-factor authentication when using a VPN connection.

SM022

The solution should limit data sharing to only those entities and individuals located in the United States and/or U.S. territories that maintain a current data sharing agreement with the Department consistent with Department-required agreements and security and privacy policies and procedures.

Cerner will limit data sharing to the identified entities and individuals that maintain a current data sharing agreement with DHHR. We will not take in the data unless an agreement is in place. We will not be involved in the data sharing agreement process, but the data Cerner shares or ingests in the Platform will go through the DUA process.

SM023

The solution should have the ability to control access rights to data and system functions based on authorized solution user role-based access.

DHHR will have the ability to provide access to appropriate users and stakeholders. This access will consist of access at the role, environment, and permission level. DHHR can control how data is manipulated and shared using security groups and profiles.

Role-based security (RBAC) defines the application access capabilities and the type of information a user is permitted to access and view. RBAC provides controls around the access of data based on the user's role within the organization and is designed to protect PHI and comply with HIPAA.

HealtheEDW supports role-based security for content authors and content viewers. Limiting both to the appropriate levels of security for general content and reports. This allows users to create the content and the reports for either themselves or for less technical users who will only view the content.



SM024

The Vendor should work with the Department to define the process for access to the solution in the Design, Development, and Implementation (DDI) phase.

We will work with DHHR to define the process and for access to the Platform during the DDI phase.

SM025

The solution should support role-based user access.

We support role-based user access. Cerner's standard practice for all areas of system management, as well as applicable application management, uses a least privileged access control driven by role-based permissions. This ensures that access is restricted to areas of the system and information that it is the minimum necessary for the performance of their job functions.

SM026

The solution should provide an interactive, adjustable time-out feature for authorized solution user inactivity in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.

The HealtheIntent Platform utilizes a federated security model and leverages SAML 2.0 or OPENID 2.0 for authentication. We enable the user to configure their own single sign-on and single log-out (SSO/SLO) parameters through SAML or OPENID. Time-out duration is configurable. When an inactivity time-out is approaching, the system will warn the end user allowing the user to extend the session if needed.

SM027

The solution should provide alerts to authorized solution users that inactivity will result in being timed out after the specified period of inactivity in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.

The timeouts of users within the HealtheIntent Platform will be configured and determined by the IdP of DHHR. HealtheAnalytics displays an inactivity warning within the Platform based on what is configured in the IdP.

SM028

The solution should have the ability to enforce password policies for length, character requirements, and required updates in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.

The HealtheIntent Platform utilizes a federated security model and leverages SAML 2.0 or OPENID 2.0 for authentication. It depends on an existing IdP. Using the HealtheIntent Platform's federated security model enables users to be maintained centrally and a single sign in grants access to multiple applications. With this federated approach, the HealtheIntent Platform typically leverages the authentication system you already have in place. The DHHR system defines password resets and related details. The Platform is accessed using a web browser and transactions are securely exchanged. Additionally, the HealtheIntent Platform uses standard TLS for all Web connections. Activity is tracked and logged with P2Sentinel which includes a dashboard for monitoring and can include alerts to indicate any defined violations.

SM029

The solution should store passwords in encrypted form in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.

The HealtheIntent Platform does not store usernames and passwords in the tools and applications. The IdP would manage and maintain the identity of DHHR user and pass that information on to the HealtheIntent Platform for authentication.



SM030

The solution should permit system administrators to reset authorized solution user passwords.

The HealtheIntent Platform will permit authorized system administrators to reset user passwords in accordance with the IdP of DHHR.

SM031

The solution should allow authorized solution users to reset their own passwords at any time by following system-defined standards in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.

The HealtheIntent Platform utilizes a federated security model and leverages SAML 2.0 or OPENID 2.0 for authentication. It depends on an existing IdP. Using HealtheIntent's federated security model enables users to be maintained centrally and a single sign in grants access to multiple applications. With this federated approach, HealtheIntent Platform typically leverages the authentication system you already have in place.

SM032

The solution should permit authorized solution users to set and modify user security access profiles.

Solution security processes are configurable and managed by DHHR. We will work with DHHR to offer best practice recommendations for security processes.

SM033

The solution should have the ability to supply authorized data sets to authorized solution users.

Roles define who has access to control projects, data models, and data sets as well as the permissions within the role. Our experience shows that client's need three key roles designed to meet the RBAC access of DHHR which include Owners, Collaborators, and Consumers as follows:

- Owners have complete control over a project, data model, and/or data set
- Collaborators have limited control over a project, data model, and/or data set
- Consumers associate a user to a project, data model, and/or data set

Additionally, we provide capability roles to give users access to various application capabilities. The capability roles include an Administrator, Content Author, Data Author, Query Author, and Project Consumer:

- Administrator role can access everything in HealtheAnalytics
- Content Author role can access projects and end user content as well as create, modify, publish, and publish end user content
- Data Author role can access the underlying data and data relationships as well as create, modify, publish, and view data using EDS Tools
- Query Author role can access the Queries tab as well as execute, export, and save SQL queries
- Project Consumer role can view content within projects

Discoverability determines which content is visible and accessible. Objects are set to be Open, Private, or Hidden:

- Open objects are visible to any user
- Private objects allow only the object overview information to be visible to all users



 Hidden objects are not visible to anyone unless that user is already associated with the object

Cerner collects metadata during solution access by users and utilizes this data to help improve overall user experience and ensure functionality to allow DHHR to meet your security and privacy access requirements.

SM034

The solution should have the ability to provide an audit log that identifies amendments to the designated record set for an authorized solution user.

The HealtheIntent Platform provides the ability to identify amendments to the designated record set for an authorized solution user using P2Sentinel. If a user has their access changed from a whitelist user to a system administrator, the changes are logged in P2Sentinel.

SM035

The solution should have the ability to store audit logs of authorized solution user activity in a location determined by the Department in the Design, Development, and Implementation (DDI) phase.

Once logs are generated in P2Sentinel, DHHR will have the ability to store the audit log data where DHHR sees fit. The original data of the audit logs will be in P2Sentinel.

SM036

The solution should establish responsibilities and procedures for remote use in compliance with Department security policy.

The HealtheIntent is a cloud-based offering and the applications are accessed via the web using standard browsers, such as Chrome®, Firefox®, Internet Explorer®, and Safari®. Cerner utilizes two-factor authentication when using a VPN connection for remote access. We are unable to comply with the state's security policy as it relates to remote access, but users who are logged onto the system remotely will have the appropriate access as they would if they were on the DHHR network.

SM037

The solution should block pop-ups, spam, advertisements, and malware.

As our applications are web-based, our application interaction is subject to the web-browser settings and DHHR malware protection on DHHR computers. The HealtheIntent Platform will not get pop-ups, spam, advertisements within the applications. Cerner has security protocols in place to prevent and detect malware within our devices.

**SM038** 

The solution should have the ability to remove or disable systems, services, components, and modules as defined by the Department.

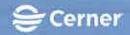
As determined during the DDI phase of the project, we will collaborate with DHHR to turn off certain tools that do not pertain to the Department. HealtheAnalytics can enable and disable certain components and modules. After configuration is complete, Cerner will work with DHHR to make the necessary changes to the HealtheIntent Platform through a managed change control process. Cerner will notify DHHR if a requested modification to the system is not applicable or possible due to our SaaS delivery model.

Since DHHR users access the proposed solution via a web-browser, DHHR will not have a need to disable components of the solution from a computer/workstation.

SM039

The solution should have secure transmission and data integrity controls to detect improper modification of transmitted information.

We recommend data evaluation be performed to ensure that the "single source of truth" paradigm is maintained. Cerner will identify bad or questionable data and work with DHHR and



the source entity to correct the data. Based on our experience, changing bad or questionable data without involving the source can compromise data integrity, and we will work with DHHR to ensure all available data is accessible for analytics and reporting.

SM040

The solution should use Secure Sockets Layer (SSL) certificates that are consistent with State and federal requirements for data in transit.

All communication between Cerner and our clients is encrypted using Secured Sockets Layer (SSL) or TLS to encrypt internet traffic.

SM041 The solution should have the ability to restrict release of sensitive data.

Cerner's controls are designed to use appropriate technology configurations and security protocols for protecting sensitive data. Additionally, we have designed our MMIS solutions to support applicable MECT Checklist Controls. Cerner's program, at a minimum:

- Assigns data security responsibilities and accountabilities to specific individuals
- Describes acceptable use of the Platform
- Provides access control and password attributes for Cerner end users, administrators, and operating systems
- Enforces Cerner end user authentication requirements
- Describes audit logging and monitoring of Cerner-hosted production environments
- Details Cerner's incident response plan
- Describes appropriate risk management controls, security certifications and periodic risk assessments
- Describes the physical and environmental security requirements for Cerner's networks,
   CTCs, and Third-Party Data Centers

HealtheIntent Platform supports 3 types of filtering:

- Venue Based filtering
  - Filters all data associated with any sensitive venue
  - Filters the data by processing the reference record; resulting in being filtered out in the population record
- Population Level filtering
  - Filters codified clinical data that is determined to be sensitive at this level
  - Filters the data by processing the reference record; resulting in being filtered out in the population record
- Application Level filtering
  - o Filters codified clinical data that is determined to be sensitive at this level
  - This data is included in the population record, but is filtered out at the application service layer so that the data is not presented to consumers such as applications

SM042

The solution should support data integrity by preventing and detecting unauthorized alteration or destruction.

The proposed solution includes our data quality monitoring capabilities. These capabilities consist of both automated and manual capabilities to ensure reliability of ETL data acquisition. The system performs checks against incoming data sets, including macro-level checking (e.g., for timeliness, ensuring a data set is not empty, etc.) and field-level validations (e.g., expected data type). We also support the ability for more advanced checks against data set trends. For example, the system can determine whether a data set that historically includes both male and



female values is sent with only male values. The system populates a status dashboard of incoming data sources that is monitored by our team. Should an issue with a source be found, the team will take steps to correct the issue and, if necessary, log the issue and alert the appropriate parties for further resolution. Any issues are tracked in our online issue tracking system, eService, through resolution. For more information regarding our data quality monitoring capabilities, please refer to the Data Quality section earlier in this Attachment.

The system's role-based access controls will ensure that only authorized users have access to read and/or modify data. These access controls include multiple levels, starting at a broad level (e.g., access to edit any data transformations) and then get granular (e.g., a user may have access to modify only one specific transformation). These access controls exist throughout the solution while enabling numerous security configuration options.

In the event someone outside the system attempts to overcome these, audit logging on the application side gives you the ability to also maintain a level of control and oversight of who is accessing your data.

SM043

The Vendor should maintain procedures that ensure all emergency and non-emergency production system changes follow a Department-approved change control process, including a risk analysis.

Cerner will document the change management processes and procedures in a formal Change Management Plan. DHHR will review and approve the plan and ensures that processes, templates, and materials align with DHHR expectations. The Change Management Plan establishes the necessary roles and responsibilities, policies, guidelines, and processes for controlling and managing changes during the life of the project and provides the deliverable to DHHR for review, comment, and approval. Also, the Change Management Plan conforms to PMBOK® standards and sufficiently addresses the challenges represented within a multi-supplier Environment.

We have significant experience in a multi-supplier environment with clients, such as Kansas and Montana. We will integrate with the overall DHHR's change policies and procedures and we are committed to participating in the CCB and implementing the approved change requests. We will work alongside other vendors when the changes span and will ensure communication and transparency are clear and concise. Cerner will update plans to hold the Cerner team accountable for our portion of the changes.

Cerner's proposed SaaS offering will be fully managed and maintained by Cerner, alleviating some of the common system management activities seen with local software implementations.

SM044 The solution should support record, database, table, and field-level access.

In addition to the pre-built templates that HealtheAnalytics leverages, our broader HealtheEDW tools enable a wide range of data access controls including record, database, table, and field-level access. Access within each control is defined via role and group associations of each user. Record-level access is often referred to as row-level security and allows for data to be limited based upon a predefined filter or based upon a parameter at runtime. A simple example is an ad hoc reporting workflow that is focused on children and therefor filters out claims of adults. A more complex and dynamic example is a report that determines the programs a user is associated with and only returns records of members enrolled in that program.



Database level access is commonly used to restrict access to a category of data. Typical examples include restriction to de-identified data, limiting access to sensitive financial data and limiting access to employee health records. Table level access allows for partial access to one our more source database. For example, a user may be granted access to enrollment information from all MCOs but not claim information. Field level access allows for additional granularity. For example, a user may be granted access to all claim information except paid amounts.

SM045 The solution should support secure file and folder access.

The HealtheIntent Platform supports secure file and folder access through our EDS tools.

SM046

The solution should support workforce privacy and security awareness through such methods as security reminders, training reminders, online training capabilities, and/or training tracking.

Cerner's security awareness program requires associates to participate in mandatory education and training activities related to their specific role. These activities are designed to maintain the effectiveness of Cerner's security posture and include:

- Continuing education campaigns
- Annual security training
- Localized security training
- Targeted security bulletins
- Employment Requirement Guidelines

All associates sign an employment agreement upon hire which binds them to an obligation of confidentiality. Additionally, those associates who have the potential to access PHI are required to take an annual HIPAA/security training.

SM047

The Vendor should collaborate with the Department to determine a security approach that integrates with other solution components to supply role-based single-sign-on access.

As required by NIST 800-53, Cerner's authentication utilizes a federated security model and leverages SAML 2.0 or OPENID 2.0 for authentication. Cerner federates with a client's existing identity provider through open web protocols, such as the Security Assertion Markup Language (SAML) to support user authentication and single sign-on.

SM048

The solution should have the ability to provide authorized solution users access to view and audit records of changes to free-form text data fields by capturing information including, but not limited to:

We will use P2Sentinel, which provides a rich, secure, reliable, robust audit trail as member data is accessed. It supports the ability to audit accesses to the member record and enables incident management through alerting and notification and definition of specific rules for monitoring suspected abuse, providing a proactive approach to safeguarding confidential data.

SM049 The name of the authorized solution user who updated a field

P2Sentinel provides audit level detail of the name of the authorized user who updated a field.

SM050 The date and time a field was updated

P2Sentinel provides audit level detail of the date and time a field was updated.



SM051 Others defined by the Department

Cerner understands that DHHR's business needs are ever-changing and we will work with you to address those needs in good faith as those needs arise.

SM052

The solution should have data encryption standards in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.

Cerner-hosted systems encrypt data in transit with a cipher strength of at least 128-bit using TLS. Data at rest is encrypted on storage arrays leveraging NIST guidelines using AES-256 encryption algorithms to ensure data is stored in a secure manner.

SM053

The Vendor should provide documentation on how the solution governs the confidential nature of information about applicants and members, including the legal sanctions that can be provided, to the State, applicants, members, and other persons and agencies to whom information is disclosed.

While we understand DHHR's need to protect the confidentiality of information about applicants and members, including the legal sanctions that can be provided, to the State, applicants, members, and other persons and agencies to whom information is disclosed, we require additional discussion with DHHR to understand its application within our proposed solution. We look forward to discussing this further during subsequent phases of your procurement process. We do not have adequate information to properly address your requirement at this time.

SM054

The Vendor should be prepared to demonstrate how the solution of interest supports regulations governing the safeguard of information about applicants and beneficiaries including, but not limited to:

The HealtheIntent Platform security supports the safeguarding of information about applicants and beneficiaries utilizing our Role-Based Access controls. Users will only have access to data based on a need to know basis and determinants based upon their role in the organization.

SM055 Names

The HealtheIntent Platform allows appropriate users to have access to names using our Role-Based Access Controls.

SM056 Addresses

The HealtheIntent Platform allows appropriate users to have access to addresses using our Role-Based Access Controls.

SM057 Medical services provided

The HealtheIntent Platform allows appropriate users to have access to medical services provided using our Role-Based Access Controls.

SM058 Social and economic conditions or circumstances

The HealtheIntent Platform allows appropriate users to have access to social and economic conditions or circumstances provided using our Role-Based Access Controls.

SM059 Agency evaluation of personal information

The HealtheIntent Platform allows appropriate users to have access to the agency evaluation of personal information provided using our Role-Based Access Controls.



SM060 Medical data, including diagnosis and past history of disease or disability

The HealtheIntent Platform allows appropriate users to have access to medical data including diagnosis and past history of disease or disability provided using our Role-Based Access Controls.

SM061

Any information received for verifying income eligibility and amount of medical assistance payments

The HealtheIntent Platform allows appropriate users to have access to income eligibility and amount of medical assistance payments provided using our Role-Based Access Controls.

SM062

Any information received in connection with the identification of legally liable third party resources

The HealtheIntent Platform allows appropriate users to have access to information received in connection with the identification of legally liable third-party sources provided using our Role-Based Access Controls.

SM063 Others as defined by the Department, State, and federal security and privacy policies

We understand that DHHR's business needs are ever-changing and will work with you to address those needs in good faith as those needs arise.

SM064 Others as defined by the Department

We understand that DHHR's business needs are ever-changing and will work with you to address those needs in good faith as those needs arise.

SM065

The Vendor should be prepared to demonstrate that the solution supports safeguarding income information that is received from the Social Security Administration (SSA) or the Internal Revenue Service (IRS).

Cerner does not anticipate receiving federal tax information (FTI) pursuant to the state's response to question Q189 submitted as part of this RFP. In the event Cerner is required to receive FTI data, Cerner agrees to work in good faith with the state using commercially reasonable efforts to achieve compliance with the applicable IRS publication 1075 requirements. While we do not anticipate receiving FTI, we do have some engineering and support teams located outside of the United States. We use offshore resources to provide 24/7 "follow the sun" support for our applications. We reserve the right to utilize the best associate to resolve issues, no matter the physical location of that associate. No state data shall be stored or hosted outside the United States without the written consent of the state. Contractor may provide temporary access to data outside the United States for its personnel, subcontractors or agents solely as necessary to perform the Services under the Agreement, provided that if data is so accessed outside the United States, Contractor shall require that its personnel, subcontractors and agents comply with the requirements of the Agreement, including the Business Associate Agreement (BAA), concerning the protection of the confidentiality and security of the data.

SM066

The solution should disable accounts after three consecutive invalid log in attempts and protect against further user authentication attempts using a Department approved lock-out mechanism

The disabling of accounts after the consecutive invalid attempts within the HealtheIntent Platform will be configured and determined by the IdP of DHHR.





# ATTACHMENT I: IMPLEMENTATION SPECIFICATIONS APPROACH

Instructions: The Vendor should provide a narrative overview of how the proposed system will meet the specifications and narrative in this RFP. Use these response sections to provide specific details of the proposed approach to meeting the implementation specifications in each process area. Be advised, while some sections only require narrative around specifications others may also contain pointed questions. Responses should reference specifications and relevant mandatory requirements using the appropriate IDs from Appendix 1: Detailed Specifications and Attachment F: Mandatory Requirements.

Responses in the sections below should be focused on the State business processes and requirements. The State also expects the Vendor to propose its approach for meeting the narrative included in this RFP.

The Vendor is required to respond to the headings below to provide detail regarding their methodology for each project management component.

## PROPOSED SOLUTION TO IMPLEMENTATION SPECIFICATIONS APPROACH

Cerner's project vision is to support West Virginia in driving change for the programs delivered to Medicaid members. We do this by empowering state agencies with modernized capabilities in a single data analytics Platform. With services, tools, and unique data constructs inclusive of multiple data types, our applications will help the state shift to a proactive management model.

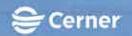
Cerner's HealtheIntent Platform supports a SaaS software delivery model in which software is managed and licensed by Cerner on a pay-for-use basis, centrally hosted, on-demand, and common to all clients. We provide the technology infrastructure, core network, servers, storage, and resources to support the entire Platform. This includes everything from the costs and procurement of sub-licensed software, hardware, storage, and internal networking to the ongoing responsibility of ensuring all applications continue to meet the infrastructure requirements our clients require.

The technology infrastructure for the Platform is located within an Amazon Web Services<sup>SM</sup> (AWS) data center using Infrastructure as a Service (IaaS). AWS data centers provide ondemand delivery of compute power, database storage, applications, and other IT resources via the internet to operate Cerner-hosted systems. Since we use both a SaaS and IaaS in our delivery model, we provide a combination of physical and virtual access to appropriate system applications specific to the Department's requirements.

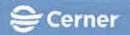
To support the implementation specifications of the EDS project, the HealtheIntent Platform provides a suite of coordinated technologies pre-loaded with both SaaS content and robust, flexible functionality. In the following table we describe the applications and tools.

Table 28 HealtheIntent Platform Applications and Tools

Applications & Tools	Capabilities
HealtheEDW	Cerner's enterprise data warehouse (HealtheEDW) integrates and leverages data from each member's longitudinal record. Enterprise Data Warehouse enables population and enterprise-wide insight through structured analytic experiences, MCO oversight and accountability, and ad-hoc reporting capabilities. Data continuously flows through Healtheintent and updates



	outcomes and performance. HealtheEDW provides predefined reports and data discovery experiences built around Medicaid use cases.		
HealtheAnalytics	Cerner's analytics application displays all relevant metrics face-up. Users can identify trends and better determine their root cause by manipulating metrics as appropriate. HealtheAnalyti is powered by data ingestion, standardization, and calculation capabilities of the HealtheIntel Platform. DHHR can derive insights from available data and devise plans of action to attain sustainable outcomes.		
HealtheDataLab	HealtheDataLab draws normalized data from DHHR's HealtheIntent Platform to support research, data science, and health intelligence initiatives. On-demand cloud computing platforms enable localized and enterprise-wide analysis for all modeling needs at scale. HealtheDataLab empowers DHHR to leverage investments in your customized statistical environment, providing flexibility in tool selection depending upon user preference.		
HealtheRecord	Our Longitudinal Record provides DHHR users and stakeholders an organized, logical view of aggregated data for each member. It enables West Virginia to consume the most recent member data in a single screen and allows for quick searches of vast quantities of information. This functionality is invaluable in gathering insight into complex populations (e.g., former foster children) and for high utilizers to gather additional information.		
HealtheRegistires	HealtheRegistries enables clients to identify gaps in care and attribute, measure, and monitor people at an individual, provider, or population level. Users can target individuals or populations to reveal, for example, high-volume service utilization, opportunities for improved quality of care, and at-risk members. DHHR can apply this information to develop and implement targeted interventions and program change.		
Cerner's Master Person Matching	Cerner's Master Person Matching is the internal Enterprise Master Patient Index (EMPI) for ou platform. It features algorithms to match incoming data to existing member records using 12 demographic properties. Our tool use probability matching algorithms to identifying if data is related to an existing member record and uses all available data to determine relatedness between records. The system assigns a similarity score for each match. The system will link the member record with the data that meets configurable matching thresholds and does not require human validation.		
Program Integrity	The Program Integrity application provides a broad spectrum of program integrity analytics tools and case management applications covering program integrity requirements, including analytics, reporting, and investigative workflow management (case intake, decision to investigate, referral to another authority, appeals, recovery, and closure). The application's continuous configurability allows for adaptation in response to ever-changing agency, regulatory, and statutory business requirements		
i2iLinks	A standards-based proprietary interface technology that offers predictable and consistent results and supports a growing number of communication protocols such as HL7 over TCP/IP and Web Services. This powerful, full-featured integration layer connects disparate systems of clinical data, laboratory systems, financial reporting systems, payer and claims systems, Enterprise Data Warehouses (EDW), Health Information Exchanges (HIE) and more. Over 60 interfaces are part of the i2iLinks library, making it one of the most comprehensive interface systems available today. i2iLinks also provides operational support to the system in regard to code updates, logging and status reporting.		
P2Sentinel	An auditing tool for tracking privacy and policy regulations by measuring auditability, policy accountability, and improvements against the policy.		
SAP BusinessObjects	SAP Business Objects is a third-party tool that provides a visual drag-and-drop interface to support robust custom reporting. It allows users to create queries on the fly; introduce formulas and new variables to existing objects; and aggregate, filter, and group by desired elements.		
Tableau	Tableau is a third-party tool that supports data discovery and interactive visualizations such as trend lines, histograms and tree maps. This tool allows users to interact with data (10M+ row data sets) rather than viewing a static report.		
SQL	SQL is used for the retrieval and extraction of information from a database by enabling users to create their own data sets from existing data, create their own data models, and write their own queries using free-hand. The SQL Query writer supports query development at a simple,		



	complex, advanced, and sophisticated analytic reporting level that helps end users view and understand their data.
Project Portal	The Project Portal serves as project management website and a hub of communications for the West Virginia EDS project. It is a comprehensive document repository, allowing for maintenance, versioning, and search capabilities throughout the life of the project. It houses the management plans, status reports, risk and issue log, agendas, minutes, project deliverables, and other project documentation available to all designated MMIS project stakeholders.
eService	eService is an online trouble-ticket system that allows user to log and track Service Records (SRs) from any approved device and at any time. We offer support services through various access points including eService, and Cerner Support, and self-help.
Cerner uLearn	Trainees will access Cerner's online learning tool (uLearn) to review and register for classes and web based trainings prior to the event. Users can search and register for required courses, preview teaching format, and refine their search by course date and instruction type
Cerner Wiki	
Cerner Status & Performance Dashboard	Cerner's Status & Performance Dashboards allows DHHR personnel the ability to track real-time performance or system status associated to the HealtheIntent Platform. Email alerts and notifications are configured to update personnel on incidents or irregularities that could impact their environment. We also have a performance dashboard that monitors SLA Performance.
Test Tracker	The test tracker performs tests for the quality of the work on the configuration and reports. Results of all testing activities may be viewed by project team members (Cemer and DHHR) in the testing tools.
Requirements Traceability Matrix (RTM)	The Requirements Traceability Matrix (RTM) is a tool housed on the Project Portal that links requirements throughout the validation process. The purpose of the RTM is to ensure that all requirements defined for a system are traced back to the respective test script, deliverable, or attestation document.

The applications lend themselves to deep, contextual insight on the key challenges West Virginians face and provide a stage for action to improve member outcomes. The following Project Vision and Release Schedule Alignment and DHHR Proposed Release Schedule demonstrate immediate advances to begin with release one and continue through subsequent releases.

#### Project Vision and Release Schedule Alignment

Our project vision is to support West Virginia in driving change for the programs delivered to Medicaid recipients by empowering state agencies with modernized capabilities in a single data analytics platform. Through services, tools, and unique data constructs inclusive of multiple data types, Cerner's applications will help the state shift to a proactive management model lending itself to deep, contextual insight on the key challenges West Virginians face providing a stage for action to improve member outcomes.



Figure 45 Project Vision



To support West Virginia in driving change for the programs delivered to Medicaid recipients by empowering state agencies with modernized capabilities in a single data analytics platform. Through services, tools, and unique data constructs inclusive of multiple data types, Cerner's solutions will help the state shift to a proactive management model lending itself to deep, contextual insight on the key challenges West Virginians face providing a stage for action to improve member outcomes.



- Speed to Value
  - 1099 pre-built measures
  - 16.9K+ concepts curated from 1.9M codes and 195+ standard terminologies
- Successful takeover in modular Medicaid
- Proven delivery methodology to support shorter turn release strategies





- Deep experience with non-claims data sources 40+ in clinical specifically
- Connection of various data types in one centralized EDW for proactive and predictive analytics
- Success with unique, complex, vulnerable population cohort analysis
- Integrate tools and algorithms to enhance Program Integrity



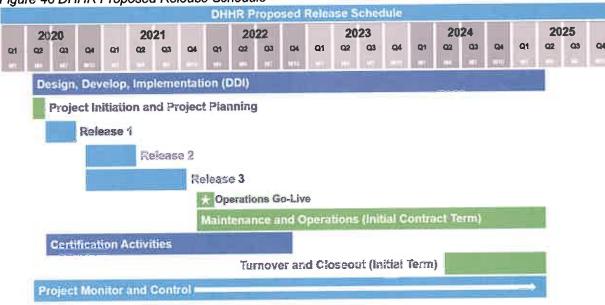


- Modernized T-MSIS application geared towards data quality to help WV mitigate CMS Critical Issues (Cl's)
- Experience supporting broader program advancement beyond traditional Medicaid
- Experience providing Managed Care connection and oversight

#### Release Approach:

We present the DDI implementation schedule which is based on a phased rollout approach of 3 releases.

Figure 46 DHHR Proposed Release Schedule





Effective management of the West Virginia EDS Project's scope, schedule, and resources relies upon a flexible, collaborative, and disciplined approach to project management. We understand the importance of effective, productive project management through DDI, operations, turnover and closeout phases of the West Virginia EDS Project. We employ a Medicaid Deployment Methodology as our project management framework based on the Project Management Body of Knowledge (PMBOK®) and industry project management standards. Our practices are further bolstered by lessons learned in the evolving modular Medicaid systems, as well as more than 40 years of managing and supporting the large-scale implementation of health care applications.

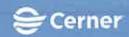
We will provide DHHR with an experienced project management team, a suite of tools designed to yield high quality deliverables, and an efficient, responsive project process. Our Medicaid Deployment Methodology provides for testing and quality assurance throughout the DDI and operations phases of the project. The Medicaid Deployment Methodology approach uses the following guiding principles to promote project success:

- Empower project management teams with the right processes, tools and quality controls designed to ensure successful completion of project
- Identify and mitigate risks and issues as early as possible through the application of industry project management best practices
- Foster a culture of collaboration and transparency through frequent and open communication with DHHR and other stakeholders
- Establish and use a proven, effective, and repeatable project structure, processes, and controls
- Continuously improve our processes, deliverables, templates, and tools based on lessons learned in the evolving modular Medicaid system

During project initiation, we conduct a series of events for current state analysis, data integration, and requirements validation (JAD sessions). Based on the findings from these events, we begin to construct a Project Management Plan (PMP) to submit for DHHR approval. The PMP governs the overall project management for all phases of the project and sufficiently addresses the challenges represented within a multi-supplier, integrated systems solution.

In coordination with the PMP, Cerner prepares a Project Work Plan (PWP) outlining activities, tasks, and staffing throughout the project lifecycle. The PWP is designed to guide successful execution of each DDI phase and management through operations, certification, turnover and closeout of the project. We use MS Project® management software for our work breakdown structure, scheduling, and tracking project activities and resource capacity.

Due to the successful use of our Medicaid Deployment Methodology, Cerner Medicaid implementations have recognized value in a shorter time span than would be possible with in traditional software implementation projects. For example, we successfully implemented the first phase of our Montana EDS module in five months, with 300,000 contracted lives. The first phase included implementation of two custom registries and onboarding of three data sources, including legacy MMIS.



### 1. PROJECT MANAGEMENT METHODOLOGY

The Vendor's proposal should describe the Vendor's methodology, tools, and techniques used to support projects from requirements through finished deliverables, including deployment of the new solution, project management, checkpoints, and periodic status reporting. Describe policies and procedures employed to ensure timely completion of tasks in a quality fashion.

Our extensive experience and adherence to industry project management standards and best practices provide a stable, reliable, and effective project management approach, minimizing risk to DHHR. The Medicaid Deployment Methodology assists in managing analysis, configuration, and deployment of projects designed with guidance from ISO®/IEC/IEEE 16326:2009 and ISO® 21500:2012 standards. Enhanced processes, using defined procedures and tools, are the governing framework we use to guide the implementation of an application to meet DHHR's requirements. Through development and implementation of applications for hundreds of clients, we have refined the processes and procedures associated with implementing projects.

The Medicaid Deployment Methodology approach and PWP align with PMBOK®-identified project phases and events to support the effective management and control of each phase throughout the project. PMBOK®-aligned definition of these phases and events are as follows:

- Initiate—Define the project and initiate project startup by obtaining approval from DHHR. This
  will consist of stakeholder alignment, foundational expectations, and data discovery
- Plan—Establish project scope, objectives, and define the course of action required to attain
  the objectives that the project will undertake through collaborative events with Cerner, DHHR
  and MMIS Stakeholders
- Execute—Complete the work defined in the PMP to satisfy the DHHR project requirements
- Monitor and Control—Track, review, and monitor the progress and performance of the project based on the DHHR-approved measurements and metrics; identify opportunities for improvement and satisfaction for DHHR and EDS Stakeholders
- Close—Formally complete or close the project, phase, or contract per DHHR approval and signoff

The following Medicaid Deployment Methodology and Medicaid Deployment Methodology Phases figure and table illustrates the above defined phases, their alignment with the Medicaid Deployment Methodology process flow, and the task groups DHHR has outlined. They include high-level events, tasks, deliverables and tools used to execute a successful project. Deliverables marked with an asterisk (\*) are not noted in the RFP but are standard to the Medicaid Deployment Methodology.



Figure 47 Medicaid Deployment Methodology

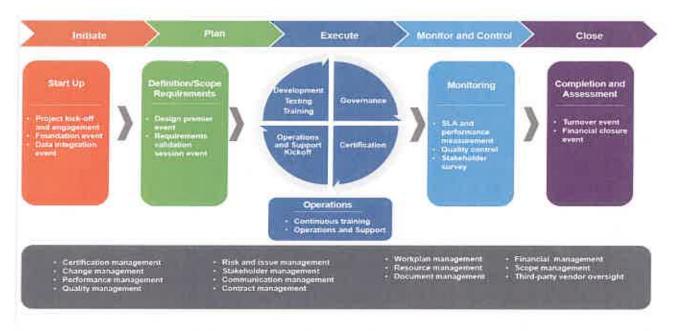


Table 29 Medicaid Deployment Methodology Phases

Medicaid Deployment Methodology Phase/DHHR Task Group	Events and Tasks	Deliverables	Tools
Initiate/Project Initiation and Planning	Project Kick-off and Engagement Stakeholder alignment Establish governance Review priorities/timeline Department expectations and success factors Roles and responsibilities Introduction to workstreams Foundation Event Workstream alignment Strategy event Data Integration Event Data Integration Event Data priority Introduction data utility tools Proposal on data specification Proposal on solution/ strategy goals Data ingestion Vetting the data files Data mapping Project Management Tasks Baseline review of current project documentation Establish project	Project Charter* PMP PMP OPWP Organization Chart* Change Management Plan (Change Management Plan) Communication Management Plan Human Resources Plan Documentation Management Plan Modularity and Reusability Plan Quality Management Plan Schedule Management Plan Scope Management Plan Cost Management Plan Risk and Issue Management Plan Stakeholder Management Plan and Stakeholder Analysis Staffing Management Plan Reconciliation Plan Facility Management Plan	<ul> <li>Project Portal</li> <li>MS Project Server</li> <li>MS Office 365</li> <li>Cerner wiki</li> </ul>



	<ul> <li>Identify tasks, timelines, work activities, deliverables, and goals and milestones, with subsequent development of the PWP</li> <li>Organize the resources necessary to begin the project, then create and maintain a framework to accomplish the objectives</li> <li>Conduct deliverable walk-throughs</li> <li>Create and submit Project Charter</li> <li>Determine common terminology</li> </ul>		
Plan/Solution Planning	Design Premier Event     Requirements Validation Session Event     Project Management Tasks     Prepare and conduct Design Premier     Conduct deliverable walk-throughs     Prepare materials for and facilitate requirements validation session     Baseline PWP     Knowledge transfer to project team all plans and expectations	<ul> <li>Data Management Plan</li> <li>Incident Management Plan</li> <li>Requirements Gap Analysis Document</li> <li>Requirements Management Plan</li> <li>Requirements Specification Document</li> <li>Requirements Traceability Matrix (RTM)</li> <li>Safeguard Procedures Report</li> <li>System Security Plan (Security Plan and Security, Privacy, and Confidentiality Plan)</li> <li>System Requirement Document/Backlog of User Stories</li> <li>Master Test Plan</li> <li>Defect Management Plan*</li> <li>Privacy Impact Analysis</li> </ul>	<ul> <li>Project Portal</li> <li>MS Project Server</li> <li>MS Office 365</li> <li>Cerner wiki</li> </ul>
Execute/Solution Design, Testing, Operations, and Solution Deployment	Development     Agile development     methodology     Retrospectives     Testing     Training     Produce and organize training     materials     Conduct training sessions     Operational Milestone Review     Governance Meetings     Change Review Board     Risk Review Board     Data governance     Certification     Produce and organize     certification artifacts     Operations and Support     Project Management Tasks     Facilitate the team's high     productivity in pursuit of the     project goals	<ul> <li>Business Process Models</li> <li>Capacity Plan</li> <li>Configuration Management Plan</li> <li>Data Conversion Plan</li> <li>Data Conversion Test Cases and Results</li> <li>Database Design Document and Data Models</li> <li>Detailed System Design</li> <li>Disaster Recovery and Business Continuity Plan</li> <li>Federal Certification and Review Management Plan</li> <li>Interface Inventory</li> <li>Data Quality Reports*</li> <li>Load and Stress Test Cases and Results</li> <li>Operational Readiness Plan</li> <li>Operational Readiness Test Scripts and Results</li> <li>Regression Test Cases and Results</li> </ul>	Project Portal- Testing tool suite  MS Project Server  MS Office 365  Cerner wiki  uLearn  eService



	<ul> <li>Conduct design reviews and monitor testing plans and results</li> <li>Conduct deliverable walk-throughs</li> <li>Prepare materials and training on support turnover</li> </ul>	<ul> <li>Reports and Forms Inventory</li> <li>System Integration Plan</li> <li>System Integration Test (SIT) Cases and Results</li> <li>Training Management Plan and Schedule</li> <li>User Acceptance Testing (UAT) Cases, Results, and Letter</li> <li>Cutover Playbook</li> <li>Federal Review Supporting Documentation</li> <li>Implementation Plan</li> <li>Implementation Certification Letter</li> <li>Operations Change Management Plan</li> <li>Report Distribution Schedule</li> <li>Solution Health Monitoring Plan</li> <li>System Operations Plan</li> <li>System Operations Plan</li> <li>System and User Documentation  <ul> <li>Report Specifications*</li> </ul> </li> <li>Training materials, training assessments, and training results reports</li> <li>Turnover and Closeout Report</li> <li>Help Desk Plan*</li> <li>Meeting agendas, minutes, and materials*</li> </ul> <li>Lessons Learned Report*</li> <li>Service Level Agreement (SLA) and performance measurement reports*</li> <li>Corrective Action Plans (CAP) (if applicable*)</li> <li>Operational Incident Reports (if applicable*)</li>	
Monitor and Control/Project Monitor and Control	<ul> <li>Continuous Training</li> <li>Operations and Support</li> <li>SLA and Measurement</li> <li>Project Management Tasks         <ul> <li>Monitor and report progress against the project schedule</li> <li>Facilitate communication to all stakeholders</li> <li>Prepare meeting agendas and materials, schedule status meetings, and create meeting minutes</li> <li>Circulate status and other reports</li> <li>Conduct Risk and Issue Assessment reviews and maintain the Risk and Issue Log</li> <li>Maintain the Change Request Log</li> </ul> </li> </ul>	<ul> <li>Weekly and Monthly Status Reports</li> <li>Project Schedule</li> <li>Risk and Issue Log/ Exception Plan</li> <li>Updated Training Management Plan</li> <li>Updated RTM</li> <li>Updated Project Management Components (as triggered by changes)</li> <li>SPI/CPI monitoring*</li> <li>Audit Reports*         <ul> <li>SOC 1SM and SOC 2SM Attestation</li> <li>Penetration Attestation</li> <li>Risk Assessment</li> <li>POAMs</li> </ul> </li> <li>Operational support metrics*</li> <li>SLA and performance measurement reports*</li> </ul>	<ul> <li>Project Portal</li> <li>Testing tool suite</li> <li>MS Project Server</li> <li>MS Office 365</li> <li>Cerner wiki</li> <li>uLearn</li> <li>eService</li> <li>Performance Dashboard</li> <li>Cerner Status Dashboard</li> <li>P2Sentinel</li> </ul>



	<ul> <li>Update the project schedule         with actual time and revised         estimates</li> <li>Facilitate stakeholder         satisfaction surveys on project         management effectiveness</li> </ul>	<ul> <li>Corrective Action Plans (if applicable*)</li> <li>Operational Incident Reports (if applicable*)</li> </ul>	
Close	<ul> <li>Receive sign-off from DHHR on Turnover and Closeout Report</li> <li>Knowledge transfer to new vendor</li> <li>Receive sign-off from DHHR on completion of knowledge transfer</li> </ul>	Financial Closeout Report*	<ul> <li>Project Portal</li> <li>MS Project Server</li> <li>MS Office 365</li> <li>Cerner wiki</li> </ul>

The solution should align with the Department's vision for the to-be Enterprise Data Solution (EDS) environment.

Cerner's Medicaid Deployment Methodology is based on PMBOK® and rooted in our experience implementing and supporting Medicaid enterprise data warehouses and our expertise with varied data types. The Medicaid Deployment Methodology and the application offering set a strong foundation for DHHR to advance data analytics and decision support in a real and meaningful way—particularly, by designing, configuring, and connecting the end users to the insights that matter. Cerner has reviewed DHHR's Medicaid Information Technology Architecture (MITA) State Self-Assessment document in the RFP and thoroughly and understands the vision for the to-be EDS environment. We will align with the Department to advance the to-be vision for both technology and business processes to work toward better care, and better health for West Virginians.

PM002

The solution's initial data load should consist of all data contained within the existing data warehouse decision support system (DW/DSS) at the time of the implementation of the Enterprise Data Solution (EDS).

We will work with legacy vendors and DHHR to obtain necessary data for the initial load and turnover of data. Our process allows us to accept discrete data in various formats including, but not limited to, HL7, EDI and CSV flat files through an internally developed tool, the HealtheIntent Platform Data Upload Utility (HIDUU). We will collaborate with DHHR to identify the appropriate data, such as data sources and types of reports. After the Foundation and Data Integration events, the tasks necessary to load the existing DW/DSS data will be scheduled in the PWP for DHHR review and approval. The initial phases of the project will focus on the MMIS, PEIA, and Health Statistics Center (HSC) sources as the foundation. Additional releases will build on this foundation and will adjust based on the needs of DHHR.

PM003

The solution's initial data load should be inclusive of all data sources identified by the Department.

As one of the first activities upon contract award, we organize and lead Foundation and Data Integration events with DHHR and other MMIS and state stakeholders to review data sources documented in the proposal, identify and prioritize any other data sources, and plan for implementation. The objective of these events is to understand data transmission, data format, and data content, which will be documented in Interface Control Documents and source-to-target mappings. Once the source-to-target mappings are in place, we request test files to begin testing extract, transformation and load routines which are used to move data and interfaces from the legacy system to the new application. Our data migration strategy includes repeatable tasks that will be applied to each data source and documented in the PWP. On DHHR approval of the PWP, we will begin executing the tasks to load the identified data sources.



The solution should support daily, weekly, monthly, and as needed data loads from all data sources identified by the Department.

Cerner supports any data load frequency (e.g., daily, weekly, monthly, etc.). We will collaborate with the Department to support data loads by source. For the State of Kansas, we currently load roughly 800 tables from 24 data sources at varied frequencies (weekly, twice monthly, monthly, and quarterly).

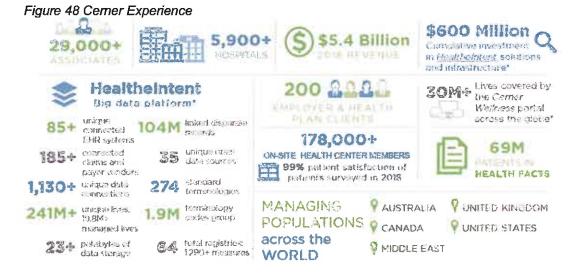
PM005

The Vendor should assist the Department in obtaining, integrating, and maintaining data that includes but is not limited to:

and Medicaid. The availability and exchange of data is essential to focus on the Medicaid member to improve clinical outcomes and bend the cost curve in health care. We have interfaces with over 1000 entities, and the number continues to grow, proving our experience at establishing, maintaining, and developing interfaces. Our application supports multiple formats and options for exporting and interface specifications necessary for models, metadata, and additional supporting information. We have established our commitment to modernization and the need to use data to drive significant and sustained improvements in MITA maturity. We support the modularity standard with our modular, flexible approach to systems development that includes open interfaces, public APIs with the separation of business rules from the core programming. The use of open interfaces and public APIs assures it will extract and export the data it needs to interoperate with other entities, including CMS, and enable DHHR users to retrieve raw population data.

We support all data types listed below in PM006 through PM017. The schedule and approach are determined during data discovery and onboarding. Scheduling is included in the Data Management Plan, per requirement DO17.

The HealtheIntent Platform stores, analyzes, aggregates, and visualizes large, complex structured, semi-structured, and unstructured text data from source systems. During automated processing, data is standardized, quantified, and combined across DHHR's data sources and relevant open source data. Cerner has deep experience delivering population health applications to diverse clientele, all with unique circumstances and requirements. To date, 173 clients are using HealtheIntent applications, including Kansas and Montana Medicaid. The following diagram highlights our experience.





Medicaid data

Cerner has the infrastructure and processes to ingest, integrate, and maintain data across several legacy Medicaid systems. We are experienced with MMIS source systems, Medicaid subsystems, Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), and spreadsheets local to Medicaid analysts.

Cerner has delivered on aggressive timelines to support program requirements. For example, in the state of Montana, the first release of the project was deployed in five months and involved implementing an enterprise data warehouse, three data sources (including legacy MMIS), and two custom registries. Following the fast delivery of the first release, three other releases followed, encompassing 15 more data sources, eight additional registries, seven ad hoc data models, 18 analytics reports, two detailed data science research projects, a CMS production-approved T-MSIS application, and six federal reports. This project was comprised of 18 Data Sources Onboarded, including the following:

- Clinical: 8 (1 Cerner EHR, 7 non-Cerner)
- Financial: 5
- Claims & Eligibility: 5 (includes MMIS)

The Platform features a library of existing health care and Medicaid-specific report templates built into the solution and out-of-the-box measures that the Department can leverage upon implementation. Cerner also uses Medicaid data for MCO analysis and financial management. We apply Medicaid data to support CMS Federal reports, T-MSIS, Care Management, Program Management, Utilization Management, Quality of Care reporting, and other efforts that are customary responsibilities of Medicaid programs. In Montana we leverage Medicaid member and provider data with Geographic Information System software to create a powerful Access to Care report with drive-time analysis, based on the geographies associated with members' and providers' addresses.

## PM007

Medicare data

Nearly any type and form of data, including Medicare data, can be ingested through our solution's APIs. Cerner's consulting services assist in extracting and pushing data into the ingestion APIs for each data source.

Cerner has deployed the HealtheIntent Platform for some of the nation's top performing Medicare Shared Savings Programs. As part of this program, we worked with a client to achieve a substantial cost reduction across their member pool. After consolidating their technological assets and data sources into HealtheIntent, they utilized an algorithm inside of the solution to evaluate paid claims for members prior to their being engaged in their complex care program as well as claims after their engagement started.

The Platform leverages Medicare data that offers additional intelligence used by our existing for performance monitoring, benchmarking, and opportunity analysis. Examples of Medicare data currently being used includes CMS Benchmarks, Medicare Hospital Spending by Claim, Medicare Volume, and Medicare Prescribing Data.

Cerner also developed algorithms and analytics to support both persistent and suspected Medicare Hierarchical Condition Category (HCC) diagnoses – including identification of persistent HCCs for all chronic HCC conditions, and suspected identification of dialysis status,



morbid obesity, Chronic Obstructive Pulmonary Disease (COPD), Chronic Kidney Disease (CKD) stages IV and V, diabetes, Congestive Heart Failure (CHF), angina pectoris, heart arrhythmias, HIV, major depressive disorders, protein-calorie malnutrition, vascular disease, severe hematological disorders, disorders of immunity, and continues to develop additional algorithms.

Cerner has experience in working with clients on bundle payment models including standard content for all 35 CMS BPCIA and commercial payer bundles. Standard content identifies bundle events, qualifying services provided during that bundle and associated costs. Based on those calculations, clients evaluate historical payments compared to equivalent bundle payments. The same calculations may be used once the bundle is implemented to determine bundle payments, evaluate overall bundle impacts and refine the bundle over time.

## PM008 Commercial payer data

The HealtheIntent Platform is currently connected to 145 unique claims and payer vendors. Most payers send data using flat file formats to convey the claims and enrollment/eligibility data. We also receive adjudicated 837 and 834 EDI transactions.

Initial data onboarding of all claims sources includes vetting the raw payer files to understand the structural integrity, content consistency, codified value validity, and reconciliation patterns. Once understood, the data is structurally mapped to the HealtheIntent data models. Claim adjustments overlay or reverse previous versions of a claim based on the reconciliation patterns that exist within the file or across historical files. The most recent version of each claim is then preserved for most use cases. The granular version of each claim is also persisted.

# PM009 West Virginia Children's Health Insurance Program (WVCHIP) data

The HealtheIntent Platform leverages a diverse range of file types as data sources, including West Virginia Children's health Insurance Program (WVCHIP) data. Cerner is actively working with CHIP data across our client base.

# PM010 Managed Care Organization (MCO) data

For our Medicaid projects, Cerner has worked with a variety of data governance stakeholders including Managed Care Organizations (MCOs). We have experience working with MCO data across our client base, including in the State of Kansas. We ingest unique claims file layouts from disparate systems and map/integrate those files into our standardized layouts when loading the data.

# PM011 Higher education facilities and universities data

Cerner leverages strategic vendor partnerships to enhance and augment data using algorithms to enable episode, diagnosis, and service grouping, as well as risk adjustment, identification of potentially preventable events, and benchmarking. Analytics incorporate third-party content, including the NYU Avoidable ED algorithm to analyze visits that could have been handled in the primary care setting. Also presents providers with patients that are considered ED frequent flyers.

Cerner ingests data from higher education facilities and universities. Users then create their own datasets by combining data from different sources, or create datasets using SQL or through an interactive dataset designer tool. For example, a user can choose to create a dataset in support



of a specific use case that combines MMIS claims and clinical health related data with housing, education and employment data. Once the dataset is developed, users can then utilize the dataset to create reports, individual visualizations or dashboards. In addition, DHHR users can create temporary tables. Content from temporary tables can become permanent based upon the standard operations process, agreed to by DHHR. Cerner recommends following the same System Development Life Cycle (SDLC) process as any other standard content when converting a temporary table to permanent to ensure quality and stability.

### PM012 Administrative Services Organization (ASO) data

Cerner currently receives and onboards claim and benefit data from 145 payers, pharmacies, and benefits administrators. Other administrative data, such as data received from Administrative Services Organizations (ASO), are received and processed by the Platform.

## PM013 Health Statistics Center (HSC) data

Cerner has experience connecting to 35 open data sources to enable our clients to access non-traditional data sets alongside their clinical and financial data. Several of our clients leverage open-source social and environmental data in their population health efforts. One of our clients, a children's hospital in California, receives a nightly feed of air quality data from the EPA to identify potential trouble areas for children's asthma, which it uses to drive care manager engagement with school nurses, parents, and children to ensure parents and children are taking appropriate precautions. Other clients have utilized data from the CDC's Social Vulnerability Index to identify members who may have specific clinical and non-clinical care needs based on the characteristics of their neighborhoods.

### PM014 Public Employees Insurance Agency (PEIA) data

Over 200 Cerner clients have elected to analyze employee data. Like all other HealtheIntent Platform data, we maximize data ingestion from disparate sources, leveraging these resources to drive greater insight and informed decision-making. Employee data is loaded into the same infrastructure which enables reuse of calculations and reports while also enabling unique employee use cases. For example, clients commonly leverage out of the box wellness measures for both Medicaid and employee populations. Conversely, the social determinates that commonly impact employee and Medicaid populations vary which commonly leads to unique reports for each group.

## PM015 West Virginia Health Information Network (WVHIN) data

Cerner's Platform has connected data from 72 Health Information Exchanges (HIE) across our existing client base, and we have an existing relationship with CRISP. HIE data contains granular details not found in claims which enables more precise analytics. For example, HIE data typically includes lab results that identify members who are pre-diabetic and have growing risk factors. This type of information is used by our clients to intervene as early as possible to prevent poor health outcomes and unnecessary cost.

In addition to receiving data from HIEs, some clients share data from their EDS back into the HIE via API's. Sharing data empowers providers with a more complete health record which improves the quality and efficiency of healthcare services.



## PM016 Hospital Data

We receive data from 88 different EHR vendor systems to support the use of provider clinic and hospital data within the Platform. Examples of third-party these vendors include Epic, Allscripts, eClinicalWorks, Meditech, NextGen, Greenway, AthenaHealth, GE Centricity, Medent, Altos, HomeCare, HomeBase, PointClickCare, Practice Velocity, STI Chartmaker, SigmaCare, McKesson, ADL, Amazing Charts, Cure MD, Encompass, Foothold Technology, Higi, Netsmart, Office Practicum, Relay Health, MedHost, CPSI, QSI Dental, GEMMS, MyHealthyVet, EagleSoft, Accumedic, and Patient Ping.

Nearly a third of West Virginia's hospitals are on Cerner's EHR. Once the state has Data Usage Agreements in place with these hospitals, it is free of charge for the state to ingest the EHR data of our Cerner clients.

PM017	Others as defined by the Departmen
FIND 17	Others as defined by the Departme

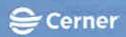
Cerner understands that DHHR's business needs are ever-changing. We will work in good faith to address those needs as they arise.

PM018 The solution should support the integration, management, and use of data from the following data sources including, but not limited to:

Cerner provides out-of-the-box reusable content and supports integration, management, and use of the data. We support the following data types described in PM019 through PM030 (see below). Users will interact with this data in the core Platform using the reporting capabilities outlined in the following table.

Table 30 Reporting Tool Capabilities

Requirements	Reporting Tool	Description of Functionality
Data query and reporting capabilities	HealtheAnalytics	HealtheAnalytics supports queries and features easily accessible preformatted reports. The tools feature user-friendly interfaces and produce responses/feedback immediately. HealtheAnalytics includes a query toolset that allows users to easily query simple to complex data for meaningful data analysis
Direct access to EDS sources	HealtheAnalytics, HealtheDataLab	Authorized users have direct access to all data stored in HealtheEDW via SQL access, BusinessObjects and Tableau. Access includes the original raw representation of the data as well as the standardized, normalized and person match representation. Users may also define new representations of data based on unique use cases via the HealtheEDW tools.
Ad-hoc reporting	HealtheAnalytics	EDS tools allow users to build and customize their own reports as needed. Users can access the drag-and-drop user interface of Tableau and BusinessObjects or create direct SQL queries. These ad-hoc reports can be saved and published within the HealtheAnalytics projects tab.
Custom report presentation	HealtheAnalytics	SAP BusinessObjects and Tableau provide a visual drag-and-drop interface to support custom reporting. We allow users to create queries on the fly; introduce formulas and new variables to existing objects; aggregate, filter, and group by desired elements; and create visualizations include charts, maps, and interactive drill paths.  Our standard and custom report dashboards provide a face up view with the ability to drill down for more information. SAP
		BusinessObjects and Tableau provide outputs that are presentation ready and include numerous options to explore data graphically as well as apply analytical processing.



Query reuse	HealtheAnalytics	Established queries can be saved or favorited for future use	
Metadata searches	HealtheAnalytics	All reports, templates, queries, imported data and analytics are stored centrally within the Platform. Content is saved alongside descriptive metadata to better organize and understand its implications. Details including name, description, author, status (e.g. draft, final, archived) and history are available. These details help users understand the purpose of content and identify an expert to follow up with for any outstanding questions.	
User narratives in saved queries	HealtheAnalytics	When users run a query, the data returned from the query are save and published into SAP BusinessObjects and Tableau. Within thos tools, additional narratives and comments can be added to explain the created/saved report.	
Access to media, structured data, and unstructured data	HealtheAnalytics, HealtheDataLab	HealtheAnalytics supports structured and unstructured text data. Free text data is viewed and analyzed using simple pattern matching. Free text data is exported from the Platform to be analyzed by an NLP technology of DHHR's choosing. Cerner's Natural Language Processing (NLP) technology (currently live in EHR workflows) is planned for future use in the HealtheIntent Platform.	
		Images, audio, and other non-textual data are typically stored in external system with a reference to that file stored in the HealtheIntent Platform.	
		re advanced analysis of image and audio files are supported via upload into HealtheDataLab directly. Users run neural networks against image files to recognize objects or patterns.	
Linear "undo"	HealtheAnalytics	The query and report creation workflows of BusinessObjects and tableau support linear undo and redo options.	
Saving and versioning	HealtheAnalytics, HealtheDataLab	Components including reports, data models and data sets including version history that is automatically maintained by the Platform.	
Interactive dashboards	HealtheAnalytics		
Data visualization	HealtheAnalytics	Within HealtheAnalytics, Tableau provides data mining, business analytics, and interactive data visualization. Large amounts of data be presented through concise visualizations. Users choose from a variety of formats such as trend lines, histograms, or tree maps to align their visualization to the most compelling view of the data.	
Legend creation and text documentation	HealtheAnalytics	HealtheAnalytics include default legends with options to add additional details. Legends typically contain categories with corresponding colors and customizable descriptions. Additional documentation may be displayed directly in the legend, appear when pointer hovers over legend, appear when an info button is pressed or appear when a web direct the user to another location.	
Summary and detail level report generation	HealtheAnalytics	HealtheAnalytics provides users with the ability to dynamically interact with and manipulate data from summary to detail level. This functionality is particularly useful when analyzing reports with grouping details where granularity is required.	
		The HealtheIntent Platform features an established library of standardized reports, as well as the ability to create a wide array of	



		state-specific, configurable detail level and summary level reports, dashboards, and queries.	
Multiple publishing formats	HealtheAnalytics	The HealtheIntent Platform is accessible across a variety of internet accessible devices. The Platform will support access from tablets, laptops, and PCs. This includes devices such as iOS®, Windows®, and Android®. Cerner supports Microsoft Internet Explorer® (The last three versions), Mozilla Firefox®, Google Chrome®, and Apple Safari® (The last two versions of each). It is assumed that client devices will have JavaScript, CSS and Cookies enabled.	
"In app" data manipulation	HealtheAnalytics	Users add additional formulas to analyze data and create exports using report formatting, such as Excel spreadsheets and PDF files (.csv, .pdf, .xls, .xlsx). The exported data is available for manipulation using third-party spreadsheets or additional packages for additional statistical and predictive analysis. A user can manipulate report presentation as described, but cannot change the stored data in the EDS.	
Manual report modification	HealtheAnalytics	Users make manual report modifications within the end user views.  Users make selections to update the report display and select data elements or characteristics of interest.	
Multiple data export formats, including any size or other limitations in export method	HealtheAnalytics		
Prompt based, predefined reports	HealtheAnalytics	Prompts are included in most reports including Cerner standard and unique reports created for DHHR. The user may be prompted to enter a value (for example, a date range) or the system can automatically adjust the results displayed based on the attributes of the user (e.g. automatically limit results to the region that user is associated to)  The Healtheintent Platform features over 100 out-of-the-box standard report templates. Examples of these standard reports include Beneficiary Access to Care, MCO Performance, Member Management, to name a few. In addition to these standard reports, Cerner designs, develops, and implements standard, preformatted custom reports as defined by DHHR.	

PM019 Medicaid data

Cerner has the infrastructure and processes in place to ingest, integrate, and maintain data across several legacy Medicaid systems. We are experienced with MMIS source systems, Medicaid subsystems, Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), and spreadsheets local to Medicaid analysts.

We have delivered on aggressive timelines to support program requirements. For example, in the state of Montana, the first release of the project was deployed in five months and involved implementing an enterprise data warehouse, three data sources (including legacy MMIS), and two custom registries. Following the fast delivery of the first release, three other releases followed, encompassing 15 more data sources, eight additional registries, seven ad hoc data models, 18 analytics reports, two detailed data science research projects, a CMS production-



approved T-MSIS application, and six federal reports. This project was comprised of 18 Data Sources Onboarded, including the following:

• Clinical: 8 (1 Cerner EHR, 7 Non-Cerner)

Financial: 5

Claims & Eligibility: 5 (Includes MMIS)

The Platform features a library of existing health care and Medicaid-specific report templates built into the solution and out-of-the-box measures that the Department can leverage upon implementation. We also use Medicaid data for MCO analysis and financial management. We apply Medicaid data to support CMS Federal reports, T-MSIS, Care Management, Program Management, Utilization Management, Quality of Care reporting, and other efforts that are customary responsibilities of Medicaid programs. In Montana we leverage Medicaid member and provider data with Geographic Information System software to create a powerful Access to Care report with drive-time analysis, based on the geographies associated with members' and providers' addresses.

## PM020 Medicare data

Nearly any type and form of data, including Medicare data, are ingested into our solution using APIs. Cerner's consulting services assist in extracting and pushing data into the ingestion APIs for each data source. Cerner has deployed the HealtheIntent Platform for some of the nation's top performing MSSPs (Medicare Shared Savings Plan). As part of this program, we have worked with a client to achieve substantial cost reductions across their member pool. After consolidating their technological assets and data sources into the Platform, they utilized an algorithm inside of the solution to evaluate paid claims for members prior to their being engaged in their complex care program as well as claims after their engagement started. The Platform leverages Medicare data that offers additional intelligence used by our existing for performance monitoring, benchmarking, and opportunity analysis. Examples of Medicare data currently being used includes CMS Benchmarks, Medicare Hospital Spending by Claim, Medicare Volume, and Medicare Prescribing Data.

Cerner has developed algorithms and analytics to support both persistent and suspected Medicare HCC diagnoses – including identification of persistent HCCs for all chronic HCC conditions, and suspected identification of dialysis status, morbid obesity, COPD, CKD stages IV and V, diabetes, CHF, angina pectoris, heart arrhythmias, HIV, major depressive disorders, protein-calorie malnutrition, vascular disease, severe hematological disorders, disorders of immunity, and continues to develop additional algorithms.

Cerner has experience with bundle payment models, including standard content for all 35 CMS BPCIA and commercial payer bundles. Standard content identifies bundle events, qualifying services provided during that bundle and associated costs. Our clients evaluate historical payments compared to equivalent bundle payments, and these same calculations may be used once the bundle is implemented to determine bundle payments, evaluate overall bundle impacts and refine the bundle over time.

## PM021 Commercial payer data

Cerner's experience with a variety of commercial payer data sources demonstrates the Platform's ability to add populations beyond Medicaid and leverage a greater pool over state health care data to support the Department in policy management, health research, and



legislative support. We load data into the Platform and provide content that facilitates analysis of value-based and risk-based reimbursement models for commercial payer agreements. We work with our existing health system and employer clients to ensure they track and monitor quality and efficiency goals throughout the performance period and report this information to all relevant stakeholders.

## PM022 West Virginia Children's Health Insurance Program (WVCHIP) data

Cerner currently reports on CHIP data in a variety of ways for both federal reports and reports specific to state agencies. These reports cover many topics, including trends in utilization, quality of care, costs, eligibility and enrollment, and gaps in care. These reports are typically filtered to show information relating only to CHIP members and CHIP sub-populations, such as expansion populations or state-specific specialty programs. Data provided by DHHR will support state and federal reporting requirements. Cerner provides template queries and reports built for State Medicaid Agencies. Our application provides the capability to produce the suite of Medicaid and CHIP Business Information Solution (MACBIS) reports such as CMS-21, CMS-37, CMS-64, CMS-372 and CMS-416. Cerner generates the reports that include information for the CMS-64 and CMS-21 in a format that will support manual entry into the CMS automated Medicaid Budget and Expenditure System/State Children's Health Insurance Program Budget and Expenditure System (MBES/CBES).

### PM023 Managed Care Organization (MCO) data

Cerner uses encounter data to better guide clients on MCO oversight, MCO utilization, access to care reporting, and provider networks. MCO data is leveraged to ascertain historical costs, and the ability to use those costs to inform the state for rate setting purposes. Essentially, this process is used to determine past cost, future costs, how cost compares to MCO payment, and determining the final rate to prevent overpayment. Most reports are developed so that comparisons between MCOs and FFS populations can be made, addressing analytical needs for a variety of reporting efforts, including quality of care, financial management, access to care, utilization management, and other areas.

## PM024 Higher education facilities and universities data

Cerner has extensive experience with academic medical centers. Academic research embedded within the system can be run against a wide variety of data sources, allowing Cerner to leverage research data to identify the impact of care access and its relation to health outcomes. For example, the NYU algorithm used by Cerner applied academic research to identify avoidable visits. In this example, academic research was run against a wide variety of data sources to identify unnecessary utilization. We do the same with social determinant data. Government sources (among others) offer rich, quantified social determinants of health data in various demographic areas. We can import this data and cross reference it with health outcomes to determine, for example, transportation or housing instability that results in poor health outcomes.

#### PM025 Administrative Services Organization (ASO) data

Cerner incorporates administrative data of various types. We incorporate data that is needed to evaluate which populations have transportation challenges, for example, and this data is used to coordinate transportation services for members to attend appointments.



PM026 Health Statistics Center (HSC) data

Cerner supports the integration, management, and use of various types of health statistics data, for example, vital statistics data, behavioral health data, tobacco use data, and other common HSC data. Currently for the state of Kansas, we are onboarding Vital Statistics data to identify the most valuable use cases. These may include supplementing data on overdose deaths for opioid monitoring, allowing them to view on a more granular level which members have been affected by opioid poisonings. This may also assist the state in determining efficacy of policy changes in decreasing overdoses. Vital Statistics may also be used to supplement data on maternal morbidity, helping the State to more accurately report on the Core Set of Maternal and Perinatal Health Measures. Those measures can, in turn, be merged with EHR and claims data to create a dashboard view focused on birth, low birth weight, well-child visits, prenatal and postpartum care, contraceptive care, and any other measure that the State would be interested in tracking.

Cerner will collaborate with DHHR to prioritize HSC opportunities. For example, by onboarding Behavioral Risk Factor Surveillance System (BRFSS) data, the Department will pair identifiable data on Medicaid members for improved prevention of adverse events. We establish pre- and post-policy implementations and program changes to determine the impact of preventative services (such as Pap smears and mammography) and management of chronic conditions like hypertension, obesity, and high cholesterol. Cerner can also leverage integrated Geographical Information System (GIS) capabilities to help the State target specific geographic populations with needed programs.

## PM027 Public Employees Insurance Agency (PEIA) data

Cerner supports the integration, management, and use of various types of public employee healthcare-related data. In addition to evaluating their members, many clients evaluate quality measures for their employees to identify opportunities for improvement. For example, our reporting tools use data from wellness programs that target exercise and preventive care to reduce chronic illness.

## PM028 West Virginia Health Information Network (WVHIN) data

HIE data provides insights to care not directly paid for by Medicaid. This data also provides granular details, such as lab results, that can be referenced to better understand a risk factor. For example, diabetes lab results may be obtained on pre-diabetic population, and the data is used to assist in diabetes prevention. The data is used to complement our existing claims data, providing timely and relevant information, and as a result, provides a comprehensive picture of a population and target cost.

### PM029 Hospital data

Hospital data is inherent to our core EHR. Our ability to combine hospital data from within Cerner's EHR or external EHR with claims data allows us to drive collaboration across a variety of clients. This combination of data provides a complete picture of population and target cost, resulting in a richer, more complete data set. Our ability to provide hospital (EHR) data, including clinical data, goes beyond the traditional risk scoring of data and episode grouping.

#### PM030 Others as defined by the Department

Cerner understands that DHHR's business needs are ever-changing and we will work alongside you to address those needs in good faith as they arise. We have many current Population



Health analysis initiatives (in partnership with 173 clients) to track metrics including homelessness, outreach services, and foster care. This affords a deeper understanding of the various data sets such as homeless initiative, a deeper understanding the foster care circumstance, or social determents of health care. Our experience has allowed us, over time, to discover different ways to solve issues based on lessons learned and system design, for example.

PM031

The solution should have the ability to support data quality assurance and control activities.

Our processes and design ensure data has referential integrity. Data quality improvement processes seek to measure data quality (both definition and content), analyze, identify, correct root causes of data defects, and establish improvement processes to prevent defective data going forward. We produce reports that demonstrate checks and balances within the data conversion process and review those reports with DHHR prior to moving data into the production environment.

The HealtheIntent Platform provides the capability to identify and report data quality issues including data redundancy, incorrect values, missing values, and inconsistent values of the data sources, and to continually monitor the quality of the data extracted. Our solution includes, applications, tools and automated processes to proactively address data issues at ingestion, ensuring consistent collection and enforcement of data integrity rules. Automated data validation routines ensure consistent and complete data loads, as compared to the source system. Our solution includes a Data Quality Monitoring tool to ensure consistent collection and other routines for data. The integrity of the data is validated against the source system. The evaluation process includes checking keys for null values and valid data types. All the data becomes an available source of data for analytics using tools embedded in HealtheAnalytics (i.e., BusinessObjects and Tableau).

Users view data outliers via BusinessObjects reports or Tableau summary visualizations that support drilling down to details. The detailed records behind the Tableau visualization or the results of a BusinessObjects query can be exported so the user can forward the data to the appropriate contact at the data source for further review or correction.

PM032

The solution should be implemented and fully functional prior to the contract close of the existing data warehouse decision support system (DW/DSS).

Based on the outcome of the Foundation and Data Integration events, Cerner will create a detailed PWP, outlining tasks, milestones, and resources needed to achieve full, functional implementation prior to close of the existing DW/DSS contract. Our project manager will provide weekly and monthly status reports on the tasks and milestones in the PWP and will raise any necessary risks or issues. Our team has experience replacing legacy vendors, including replacing the MMIS vendor in the state of Kansas project. We include the detailed Work Breakdown Structure and the MS PWP detailing the steps to be fully functional prior to the close of the existing contract. For more details, please refer to Attachment E: Initial Work Plan located in the technical proposal.

PM033

The Vendor's quality management approach should be consistent with the Department's policies and procedures.

Cerner has developed a Quality Management Methodology that involves all Cerner project team members, DHHR counterparts, and any other necessary stakeholders. This methodology begins day one of the initiation phase of DDI continuing through all DDI and operations phases



until turnover and closeout of the project. This allows the team to focus on items related to quality in the initial stages and incorporate them into quality activities, standards, functionality, and processes early in the project and across all project phases.

Cerner will collaborate with DHHR throughout the project to review, compare, and, if needed, reconcile differences between the Department's and Cerner's policies and procedures to ensure we appropriately meet your needs. Cerner conducts quality reviews on a weekly basis and produces monthly analysis reports to show that we are meeting quality performance measures and producing mitigations, if applicable. Additionally, Cerner conducts monthly PMO retrospectives to ensure that all deliverables are up-to-date and that processes are consistent.

PM034

The Vendor should submit each deliverable to the Department in final form and be ready for signature approval.

Our Documentation Management Plan will outline the process for deliverable submission and approval. We will work collaboratively with DHHR to document the expectations and determine the schedule for each deliverable. During this process, we will allow for the initial submission and two additional submissions, if necessary. We submit deliverables in an approval-ready state. Before submission, our PMO conducts three levels of internal review on each deliverable. Additionally, we will conduct a deliverable walkthrough with the Department. After submission, we collaborate with DHHR to gather feedback, and we incorporate necessary changes into the final deliverable. Cerner fully understands and respects the Department's commitment to review and approve these documents. Throughout the process, Cerner provides regular touchpoints with DHHR, the PMO and others as necessary to ensure accountability.

PM035

The Vendor should submit each project deliverable to the Department in accordance with each date in the project schedule.

Cerner is committed to meeting each milestone in the approved PWP. As part of this commitment, Cerner will review the PWP with the Department and confirm deliverable timelines meet targets while allowing adequate review. Our ability to successfully meet client expectations for high quality deliverables is demonstrated as follows with the state of Montana.

- For 88 deliverables, 93% were accepted and approved with fewer than two revisions
- For 62 deliverables and 62 DED (Delivered within six months, 100% were created, delivered, and approved per approved PMP timelines. We delivered over 2,791 pages of content

PM036

The Vendor should work with the Department to develop acceptance criteria for each project deliverable.

Cerner will collaborate with the Department to review expectations during the project initiation phase. Deliverable acceptance criteria will be noted in the Documentation Management Plan, and we will adhere to the plan to ensure that our deliverables meet the acceptance criteria from the Department.

PM037

The Vendor should work with the Department's project management vendor regarding all project related activities.

Cerner is committed to working with the Department's project management vendor throughout the life of the project. We pride ourselves on open communication and transparency. In a recent client survey, we received high rankings for communication and high marks in the following categories:



- Willingness to work towards a solution
- Flexibility and collaborative attitude
- Ability to bring multiple experts to the table
- Working together as a team
- Understanding the importance of the implementation

We collaborate with the project management vendor to ensure the project is executed on time, while being budget conscious, within scope, and of high quality.

PM038

The Vendor should conduct deliverable walk-throughs for all project deliverables prior to their submission, unless otherwise approved in writing by the Department.

Cerner provides DHHR with a demonstrated project management process as well as a suite of proven methods and tools designed to yield high quality, timely implementation of deliverables. Cerner will document deliverable timelines in the PWP prior to submission. As part of this process, deliverable walk-throughs are scheduled for all project deliverables prior to submission, unless DHHR indicates otherwise. Cerner is committed to conducting additional walkthroughs on any deliverable, per DHHR request.

PM039

The Vendor should submit all meeting materials to the Department 24 hours prior to each meeting.

As part of our Medicaid Deployment Methodology and project methodology, Cerner is committed to submitting all agenda items and materials 24 hours prior to each meeting. Cerner has a proven track record with the state of Montana with a 98% success rate for timely delivery of agendas over 289 scheduled meetings.

PM040

The Vendor should capture meeting minutes at each meeting.

As part of our Medicaid deployment and project management methodology, we capture and distribute all meeting minutes for each scheduled meeting in which Cerner participates.

PM041

The Vendor should distribute meeting minutes within 48 hours after a meeting occurs.

Cerner is committed to ensuring that all meeting minutes are distributed within 48 hours of scheduled meetings. Cerner has a proven track record with the state of Montana with a 97% success rate for timely distribution of minutes over 289 scheduled meetings.

PM042

The Vendor should store and maintain all project documentation in an agreed upon document repository such as a SharePoint location.

The Project Portal serves as project management website and a hub of communications for the West Virginia EDS project. It is a comprehensive document repository, allowing for maintenance, versioning, and search capabilities throughout the life of the project. It houses the management plans, status reports, risk and issue log, agendas, minutes, project deliverables, and other project documentation available to all designated MMIS project stakeholders. All documents contain a version history section, describing changes, including who made them and when. Changes made as part of the review and revision cycle are reflected within comment logs stored on the Project Portal. The Project Portal also records all activities associated with the development and maintenance of the documents, including document check-ins and check-outs, version history, and date and time stamps of edits. We have used Project Portal sites successfully in previous State Government EDS and data analytics projects. The Project Portal



is designed for clear organization, ease of use, and secure access, and it is easily customized to the requirements of the DHHR.

PM043

The Vendor should make all project documentation accessible to all stakeholders identified by the Department.

Cerner understands the requirement to maintain a collaborative and communicative relationship with each project stakeholder. We agree to be transparent and accessible throughout the term of the contract. The Project Portal houses all documentation and is accessible to all DHHR-authorized personnel and vendors.

PM044

The Vendor should utilize a change management methodology that is based on industry standards and best practices and is approved by the Department.

We recognize that change is inevitable, especially in health care and MMIS projects. Our applications are designed to be adaptable to changing needs and regulatory requirements. Due to the involvement of multiple vendor solutions, change management may occur across the entire DHHR enterprise solution. We are prepared to evaluate our change management process and integrate with the change management process of DHHR's Project Management Office (PMO) where appropriate. Our internal approach to change management includes informing DHHR of any potential scope changes as soon as possible. The Change Management Methodology (CMM) is based on industry best practices and the Project Management Institute's Project Management Body of Knowledge (PMI PMBOK®) guide. The change management process starts at project initiation and continues across all project phases and is flexible enough to manage changes of varied complexity.

PM045 The Vendor should propose a change management methodology including, but not limited to:

Cerner's comprehensive change management process will be used throughout the lifecycle of the DHHR EDS project. The process is designed with the steps to identify, analyze, and impact changes. We are dedicated to continually improving our process in executing projects. Cerner and DHHR will discuss what work well and opportunities for improvement. If any of these continuous improvements bring changes to the plans or processes the project team will follow the approved Change Management Plan. The table below shows the Medicaid Deployment Methodology project phases aligned to the DHHR timeline and summary of events and tasks, deliverables, and resources across phases.

Table 31 Change Management Across All Project Phases

Medicald Deployment Methodology Phase	Events and Tasks	Deliverables	Resources (Cerner and DHHR counterparts)
Initiate	Identify stakeholder alignment     Identify DHHR's expectations     Identify SMEs to participate in change management activities     Identify agenda for Change Control Board (CCB)	Change Management Plan     Stakeholder Management     Plan and Stakeholder     Analysis     Weekly project management     and monthly executive status     reports	Executive leadership     Project manager     Operations manager     PMO lead     Documentation management lead



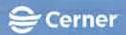
	<ul> <li>Review existing CCB processes, templates, and other materials from DHHR</li> <li>Identify common terminology</li> <li>Review, finalize, and submit Change Management Plan</li> </ul>		
Plan	Update PWP with CCB schedule     Knowledge transfer of Change Management Plan to the project team	Updated PWP     Updated Change     Management Plan (if applicable)     Weekly project management and monthly executive status reports	Executive leadership     Project manager     Operations manager     PMO lead     Documentation     management lead
Execute	Execute Change     Management Plan     Prepare materials and     participate in CCB     meetings	Updated Change     Management Plan (if     applicable)     Weekly project management     and monthly executive status     reports	Project manager     Operations manager     PMO lead     Documentation     management lead
Monitor and Control	<ul> <li>Monitor PWP</li> <li>Monitor SLAs and change management logs</li> <li>Monitor risk, issues, and impacts on change requests</li> <li>Stakeholder satisfaction surveys on change management effectiveness</li> </ul>	Updated PWP (if applicable)     Updated Change     Management Plan (if     applicable)     Weekly project management     and monthly executive status     reports	Project manager Operations manager PMO lead Documentation management lead
Close	Receive sign-off from DHHR on Change Management Plan     Receive sign-off from DHHR on Turnover/Closeout Plan and results	<ul> <li>Turnover and close out results report</li> <li>Weekly project management and monthly executive status reports</li> </ul>	Project manager Operations manager PMO lead Documentation management lead

# PM046 Approach across all project phases

Our change management approach is applicable and utilized across all project phases, including Initiate, Plan, Execute, Monitor and Control, and Close. The approach encompasses consistent steps, documentation, and outcomes that allow DHHR to evaluate changes in a streamlined manner, mitigating the impact of any changes throughout the lifecycle of the project.

# PM047 Roles and responsibilities

The Change Management Plan establishes the necessary roles and responsibilities, policies, guidelines, and processes for controlling and managing changes during the life of the project. Cerner provides the deliverable to DHHR for review, comment, and approval. We will work with DHHR to ensure the roles from the Department perspective are also represented in the Change Management Plan.



Tools necessary to support change management

Within the Project Portal, Cerner has developed a Change Request tool to facilitate change management monitoring and control. The Change Request tool serves as the entry point for Change Requests and it is available to authorized project stakeholders to monitor change request status. Supporting documentation needed for cost estimates or key dates can be attached to the Change Request in the tool.

#### PM049

Reporting

Our project manager produces weekly and monthly status reports that summarize the status of the Change Request for the project and will be utilized to assist in the governance of any changes made to business and technical aspects of a project. Cerner will prepare materials for the Change Control Board (CCB) by analyzing all Change Request prior to each meeting and supply the following information, at a minimum for each Change Request for the CCB to review during the meeting:

- Change description
- Change requester
- Request type
- Value proposition for the change
- Impact analysis for implementing or not implementing the change
- Priority
- SLA consideration

#### PM050

Others as defined by the Department

We understand that DHHR's business needs are ever-changing. Cerner will work closely with the Department to address those needs in good faith.

PM051

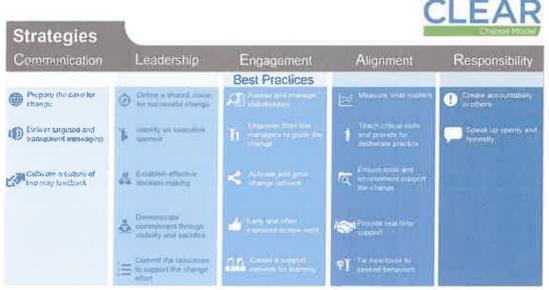
The Vendor should propose an organizational change management methodology in support of the Enterprise Data Solution (EDS) implementation.

Cerner's CLEAR change management model gives organizations a framework for considering how best to lead employees. We illustrate this change based upon five core strategies including Communication, Leadership, Engagement, Alignment, and Responsibility in the following figure. In applying this methodology, DHHR stakeholders optimize staff efficiency and efficacy. This data-driven, people-focused management approach helps DHHR identify opportunity, enact change, and measure progress associated with change initiatives. Cerner will work collaboratively with DHHR to evaluate this method and adjust necessary to meet DHHR's goals.

Research suggests that the top factors in successful organizational change include top management sponsorship, a corporate culture that supports change, and honest and timely communication and employee involvement. While a software implementation relies on coordination of logistics, schedules, and people's expertise in technology, the strategy required to gain employee adoption and utilization of that system must consider human emotion, psychology and group dynamics.



Figure 49 CLEAR Model



These five key strategies are supported by twenty best practices that are tailored for healthcare. The CLEAR Change Model is non-linear and best practices are applied based on assessment and re-assessment of your needs and effectiveness of actions. Because the CLEAR Change Model is built from proven social science and models, it may be used on its own, with another preferred model, or in addition to other models and strategies. A detailed list of the strategies is listed below:

- Communication Relevant, transparent, and consistent communications, combined with empathetic listening, help people be receptive to change. These strategies help everyone understand the why behind the change, what the change entails, and how people will be impacted by and contribute to the change.
- Leadership Leaders prepare the organization for successful change by defining vision, establishing governance, and committing resources. Effective leaders also demonstrate and communicate to their organization why change is necessary. They visibly serve as role models in living out the behaviours that ensure the organization's vision is realised.
- Engagement Key stakeholder groups play an active role in guiding others through the change. Identify and prepare influencing audiences with action plans to purposely engage all people who are impacted by the change. Involving people in the change increases their commitment to change.
- 4. Alignment The business functions of the organization should support the overall vision of the change effort. Aligning the organization's tools, resources, and processes structurally enables individuals to adopt the desired change.
- Responsibility Key interpersonal skills contribute to the development of an adaptable culture supportive of ongoing change. The organization must foster an environment where individuals feel comfortable and responsible to demonstrate these actions that lead to a change-ready culture.

Cerner's CLEAR change model is our trademarked approach for organizational change management. It is focused on creating commitment and building competency in your staff to help achieve your organization's goals.



The Vendor should conduct requirements analysis sessions with the Department during which the Vendor will review, refine, and seek approval for all requirements included in this Request for Proposal (RFP)

Effective management of requirements is a key factor in implementing and operating a fully functional EDS solution for DHHR. The sources of these requirements are a combination of this RFP and responses, DHHR, stakeholders, and CMS requirements, many of which must be met for achieving federal certification. Cerner understands that DHHR will work with the Cerner project team during requirement definition and validation to further develop the specific application requirements and obtain approval from the Department. Our approach to requirements management is collaborative and comprehensive. After the kickoff strategy session, internal project team and subject matter experts will meet to review and produce our proposal to meet all requirements. Our team will distribute (24 hours prior to meeting) an agenda and materials supporting our proposal. We then meet with DHHR to review the proposal and discuss the approach to meeting each requirement, referred to as requirements validation (analysis) sessions with decisions tracked via the Requirements Traceability Matrix (RTM). These are crucial to the success of the project and will ensure that both DHHR and Cerner have an agreed upon approach to meet this requirement. DHHR must approve the approach to meet each requirement before Cerner executes the proposal.

PM053

The Vendor should work with the Department to design the system in accordance with the following design phases:

We document the application design in three increasingly detailed iterations of the Detailed System Design document. During the initiation phase, our project manager will document milestone dates for each iteration in the Project Work Plan (PWP). If updates to the Detailed System Design are needed throughout the project life cycle, additional milestones will be added to the PWP. Cerner's Detailed System Design describes how the solution will be configured, by specifying the components to be used and describing how they will be organized in relation to one another. The Detailed System Design describes how the functional requirements recorded in the RTM transform into design specifications from which the system is configured. Cerner understands and agrees that it will have the responsibility to update the Detailed System Design throughout the Contract to incorporate all changes to the overall system design. The most current Detailed System Design and previous versions will be stored on the designated West Virginia EDS Project Portal site accessible by DHHR and authorized partners.

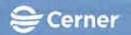
PM054

Preliminary System Design

The Preliminary System Design will identify how applications are integrated in the EDS and what configuration/development is needed to meet the requirements. During the planning phase of the Medicaid Deployment Methodology, Cerner will facilitate the Design Premier event to achieve the following objectives:

- Achieve common understanding of the solution
- Review project overview (key dates, scope, roles)
- Review detailed design decisions needed to localize the application
- Assign members to follow up on any outstanding items/issues that need clarification before the next event
- Discuss change control process

The Preliminary System Design is an output of this event and we will conduct a walkthrough with DHHR to review and approve.



PM055 Detailed System Design

During the Detailed System Design phase, we collaborate with the Department to produce detailed implementation specifications. The Preliminary System Design is elaborated during this phase to create the Detailed System Design and details gathered during Requirements Validation sessions are incorporated into the design. We will conduct a walkthrough with DHHR to review and approve.

PM056 Final System Design

As the application is configured, Cerner will update the Detailed System Design as needed to ensure that it documents and articulates the applications and functionality implemented. The document will be finalized during this phase and providing the Final System Design for the EDS Project functionality. We will conduct a walkthrough with DHHR to review and approve.

PM057

The Vendor should be responsible for all costs associated with requirements analysis and solution design.

Cerner understands the importance of close collaboration in order to result in a successful EDS Project. Cerner is committed to planning and adequately staffing the project to be managed efficiently, on time, within budget, and of high quality. The allocation of staff needed for analysis and solution design is documented in the cost worksheet.

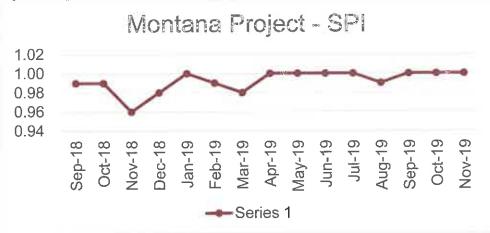
PM058 The solution should be developed and implemented in accordance with the project work plan.

The Medicaid Deployment Methodology project framework provides the processes and metrics for planning, organizing, and managing all project staff and activities. We will prepare a PWP with DHHR's scope outlining activities, tasks, and staffing throughout the project lifecycle. It is designed to ensure the project is staffed with appropriate resources, anticipates and mitigates risks, and proactively manages scope and requirements. Cerner leverages our existing project management resources, experience, and processes to adapt them in meeting the requirements of the West Virginia EDS Project requirements. This includes plans, procedures, and supporting tools (for well over a dozen process areas), such as project management planning, communication management, schedule management, development, change management, risk management, and implementation.

In our experience, the schedule and cost performance index has been close to or at one through the duration of the project, such as in the figure below showing an example from our Montana Project. Earned value management numbers have been consistently good through the project as well.



Figure 50 Schedule and Cost Performance Index



The Vendor should detail their approach to both requirements validation and joint application design in support of requirements analysis and solution design activities.

Cerner understands the importance of a quality Requirements Management Plan (RMP) to ensure the success of the EDS Project. Our RMP outlines the process and includes steps that are executed throughout the project. Our goal is to establish the way in which requirements are identified, analyzed, verified, elaborated, documented, and managed for the EDS Project. The RMP details the full validation, elaboration, traceability, and requirement change process that will be used. The requirements will be the basis for estimating, planning, executing, and controlling the activities throughout the duration of the project. Additionally, the RMP is used to document the necessary information required to effectively manage project requirements for definition, traceability, and delivery. The RMP includes the steps followed, checkpoints throughout the project, and the output of each step along the course of the EDS Project.

Requirements will be validated and elaborated as part of the Cerner scope of work through Requirement Validation (RV) Sessions for this project. To minimize time required by DHHR resources, Cerner will take the following approach:

- 1. Cerner will conduct an internal review of all requirements and prepare a plan to demonstrate how each requirement will be met.
- The Department will review the strategy to document each requirement. This step confirms that Cerner understands the requirements and meets the Department's expectations for demonstrating requirement completion.
- 3. For any requirements that need further discussion, Cerner will conduct an RV session with the Department to agree upon a strategy to demonstrate requirement completion.
- 4. The Department's acceptance for each requirement will be documented in the RTM.

Through the RV Sessions, Cerner will demonstrate that all requirements are understood correctly, and receive feedback from stakeholders to ensure that the Department's needs and expectations are adequately captured and expressed. Cerner and the Department will reach an agreement regarding which requirements will be traced to configuration, testing, certification, for example, and this categorization will be recorded and traced in the RTM. The RTM, stored on the Project Portal, will also contain more detailed information on which requirements will be



satisfied in each release. Decisions/changes to requirements made during the RV sessions are to follow the approved change management process.

All requirements will be analyzed for correctness, feasibility, traceability, and testability. Department-accepted changes to the finalized set of requirements must be updated as subsequent tasks are completed. Additionally, the requirements must be used to build use cases, test scripts, and scenarios; and be fully tested. Subsequently, the RTM will be used to demonstrate traceability to business requirements, design, attestation, test results, and Medicaid Enterprise Certification Toolkit (MECT) artifacts to ensure all business requirements are met and approved by the Department throughout the project. The RTM is managed and maintained throughout the lifecycle of the project. Our Business Lead reviews the RTM, housed on the Project Portal, on a weekly basis.

The requirements process will be used to ensure traceability of all requirements throughout the life cycle of the project. The requirements process is documented in the following process flow.

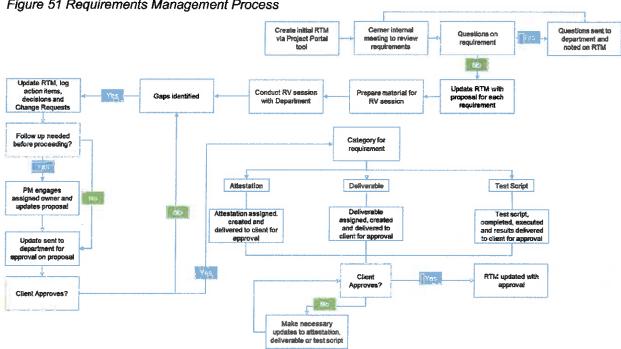


Figure 51 Requirements Management Process

PM060

The Vendor should maintain a requirements traceability matrix (RTM) throughout the lifecycle of the project.

Cerner understands and agrees that we have the responsibility to update the requirements management plan and the RTM throughout the lifecycle of the project to incorporate all changes to the overall project requirements. The RTM is maintained on a weekly basis by our Business Lead. The Business Lead will regularly export and archive versions of the RTM for historical purposes.



The Vendor should provide all stakeholders identified by the Department access to the requirements traceability matrix (RTM).

Cerner will work collaboratively with, and provide RTM access to, DHHR and other project stakeholders as identified by the Department.

PM062

The Vendor should document in the requirements traceability matrix (RTM) where each requirement is accounted for within the following areas:

The RTM (Figure 52) is a tool housed on the Project Portal that links requirements throughout the validation process. The purpose of the RTM is to ensure that all requirements defined for a system are traced back to the respective test script, deliverable, or attestation document.

Figure 52 Requirements Traceability Matrix



PM063

Design documentation

The Project Portal serves as project management website for the West Virginia EDS Project. In addition to housing the requirement traceability matrix, it is a comprehensive document repository, allowing for maintenance, versioning, and search capabilities of documentation throughout the life of the project. The RTM includes a field in which relevant requirements are linked directly to their design documentation on the Portal.

PM064

Code modules

The RTM has an attribute to link to which application module is applicable to the requirement., For example, predictive modeling will be linked to the HealtheDataLab code application.

PM065

Test conditions

Cerner uses a suite of testing tools that are integrated into the Project Portal. Detailed test scripts including execution steps and evidence gathered are stored in the testing tools. The RTM includes a Test ID field that links directly to the evidence in the testing tools.

PM066

Test scenarios

The RTM and testing suite include features that support multiple test scenarios.

PM067

Test cases

The RTM and testing suite store all test cases, execution steps, and status for each scenario.



Certification criteria

The RTM includes fields to trace applicable requirements to the following Centers for Medicare and Medicaid Services (CMS) certification information:

- MITA business area
- MITA business process
- System Review Criteria (SRC) description
- MECT checklist name
- SRC checklist number
- Application
- Deliverable/artifact name
- Link to deliverable/artifact

PM069

Medicaid Information Technology Architecture (MITA) business areas and processes

MITA business areas and processes are included in the RTM and are tracked throughout the project.

PM070

Medicaid Information Technology Architecture (MITA) Standards and Conditions

MITA standards and conditions are included in the RTM and are tracked throughout the project.

PM071

Others as defined by the Department

Cerner understands that DHHR's business needs are ever-changing. We will work with you to address those needs in good faith as those needs arise.

PM072

The Vendor should demonstrate through the requirements traceability matrix (RTM) that all documented and approved specifications have been traced throughout the development lifecycle.

Cerner documents all requirements at the beginning of the contract and will track within the RTM tool throughout the lifecycle of the project. Our RTM includes a status field that traces each requirement throughout the lifecycle; statuses include analysis, design, development, testing, and approval. This process will be reviewed, updated, and maintained based on approved changes or adding additional requirements as needed.

PM073

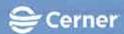
The Vendor should work with the Department to fully understand the scope, purpose, and implications of each Request for Proposal (RFP) specification.

Cerner ensures thorough preparation before the requirements validation session to confirm that we have documented our understanding of, and proposal to meet, each requirement. This lays the groundwork for requirements validation and allows for a more productive discussion with DHHR.

PM074

The Vendor should identify and work with the Department to resolve gaps between the Vendor and the Department's understanding of a specification.

Requirements Validation sessions allow Cerner and the Department an opportunity to reach a shared understanding as to what has been documented and to review the planned approach to each requirement. Any potential gap will be revealed in these sessions. Cerner will provide a requirement gap analysis document that describes our approach to resolving any gaps between the requirement and the solution.



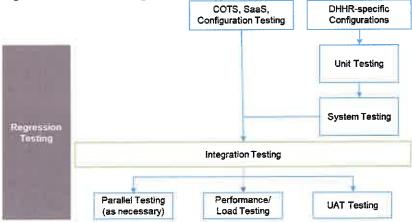
The Vendor should conduct the following types of testing in support of the solution:

The Medicaid Deployment Methodology includes a proven testing methodology based on industry standards and encompasses how the functionality and processes related to the outlined testing requirements are executed and evolve as project phases change. Cerner will review this approach with DHHR to seek input on specific objectives. The objective of the testing effort is to complete:

- Comprehensive end-to-end testing
- Testing to ensure functionality meets DHHR requirements
- Testing to ensure and improve the quality of the application
- Testing to ensure the application is providing predictable results

Our testing methodology, as seen in the figure below, involves five key activities: requirements analysis, test planning, execution, verification, and management of the testing effort. These activities often happen in parallel. The process is continuous to support further writing and refining of test scripts as design progresses. Requirements analysis and test planning refines the scope of testing as well as the time and duration needed to complete the testing effort.





The HealtheIntent Platform—the foundation on which we build the West Virginia EDS Project—has already undergone extensive testing through our development and implementation projects. For example, we have deployed applications of HealtheIntent for both the Kansas and Montana modular MMISs using our proven testing methodology.

Recognizing that Software as a Service (SaaS) products are extensively tested prior to production release, the testing in the EDS Project is targeted towards ensuring that configuration does not introduce any defects into the EDS Project environment.

In the SaaS environment, manual testing of client configurations offers the most flexibility and allows experienced testers to quickly find and verify defects. Writing and executing new test scripts happens more swiftly than would be possible with automated testing. Cerner uses a suite of testing tools (Test Builder, Test Runner, Test Tracker) to write test scripts based on client specific configurations, to execute the test scripts, and to track progress of the test scripts.



Beginning in the initiation phase, our Test Manager will work DHHR and MMIS stakeholder testing counterparts to understand expectations and align testing methodologies. Testing activities will take place in the execution phase. Business and technical users from the DHHR perform activities related to UAT. For non-UAT testing, the Department serves in a supporting role (for example, providing feedback and clarification). Testing is a critical activity necessary for verifying the solution operates predictably and is designed to ensure the deployment of a stable production environment. Cerner recognizes the importance of developing all content following SDLC to ensure production system accuracy and stability.

For Cerner SaaS offerings, HealtheIntent Platform and applications, internal validation occurs on behalf of all our clients via our centralized SDLC and development environments. Cerner manages testing across all development to ensure quality, timely, and efficient releases of application software upgrades and enhancements. Testing specific to the EDS Project serves to confirm meeting all documented requirements and proves the Platform or application is ready to move to the next phase. Cerner will collaborate with DHHR in the design of all testing types and the type of data needed for that testing type.

#### PM076 Unit testing

Unit testing (also called component testing) is a level of software testing where individual units/ components of an application are tested and used by our development team. The purpose of unit testing to validate each unit of the solution performs as expected. Unit testing is designed to produce consistent results. It tests individual programs, modules, or components to validate the design and technical quality of the application. In software development unit testing, a test type is created to test the code at a component level. The test is run in a controlled environment to exercise as many statements, branches, loops, and data paths as possible. Unit tests strive to test all logic flows through the unit and often strive to isolate the unit from external dependencies and variance. Our development teams use a dedicated internal development environment and (Software Development Kit) for the given language for unit testing. The SDK is an internal tool used by the development teams. SDK follows a proprietary process based on industry standards. Cerner conducts an audit process for each application group to ensure that the SDK is compliant with these standards.

### PM077 Integration testing

Integration testing of system-level integrated functionality, including navigational flow, data functionality, and business functionality, tests multiple connected components. Integration testing confirms the system meets its documented requirements and design specifications and tests the integration of individual work products across all project teams, modules, and interfaces. The objectives of integration testing include but limited to:

- Test the integration points between various components of the system, including external interfaces (inbound and outbound) with external entities
- Test and validate systems or components to production for readiness of requirements

Testing specific to the West Virginia EDS Project serves to confirm meeting all documented requirements and proves the Platform or application is ready to move to the next phase. Cerner will collaborate with DHHR in the design of the Integration testing activities to validate the data and confirm the functionality is working as expected. As new modules or other vendors begin sending data for the DHHR EDS project, Cerner will coordinate with the Department to conduct integration testing. Cerner creates a Master Test Plan encompassing all levels of testing.



PM078 Iterative

Iterative functional testing

Iterative functional testing will be executed per release for all components and functionality. Iterative functional testing will focus on using existing system test scripts plus additional supplemental test scripts to demonstrate logical flow of data through the application components and business processes per release.

PM079

System integration testing (SIT)

The purpose of System Integration Testing (SIT) is to perform business functions with the intent of verifying the system meets the approved business requirements and to validate an application's accuracy and completeness in performing the functions as required and designed. We will ensure the system meets approved business, functional, and end-user requirements. SIT will be conducted in UAT environment to enable integration testing across all tested components.

PM080

Interface testing

Interface testing is an integral part of our testing phase. We conduct interface testing using a unique system ID per interface. Test files will be sent to a staging area for validation of connection and files received. Currently, Cerner interfaces with over 1000 entities.

PM081

Regression testing

Regression testing ensures that previously developed and tested software continues to perform as expected and meet contract requirements following the release of new system changes or configurations. Cerner will conduct an impact analysis of any changes and will work with DHHR to confirm scope of the regression testing for changes and configuration specific to the EDS project.

PM082

End-to-end testing

End-to-end testing, like iterative functional testing, will test key business and functional processes to ensure that the functionality is meeting expectations and quality standards for the DHHR EDS project. End-to-end testing will be conducted primarily in the UAT environment and optionally in the production environment per DHHR approval. Cerner will work collaboratively with DHHR to identify processes and create end-to-end testing scripts prior to execution.

PM083

Security testing

Cerner uses a variety of security tools to perform both static and dynamic analysis of its applications to identify vulnerabilities. As part of Cerner's development process, these vulnerabilities are often addressed during the development lifecycle prior to releasing new code. Penetration testing is conducted by Cerner security professionals who have appropriate industry certifications and credentials. In addition, Cerner annually engages a third-party to conduct external penetration testing. As part of Cerner's vulnerability and threat management program, Cerner's security professionals analyze and quantify the risk potential of identified vulnerabilities and threats to both Cerner and its clients.

Cerner conducts continuous production scanning of Cerner's Platforms. Cerner scores vulnerabilities based upon the expected impact to the environment and external exposure. Once the vulnerability is scored, a process to mitigate or remediate the vulnerability is initiated. Identified vulnerabilities are assessed for risk and mitigated or remediated according to their



severity level. This analysis includes using industry standards, such as NIST's common vulnerability scoring system (NIST CVSS), and by internal penetration scanning of environments using industry standard tools.

#### PM084

Performance testing

Performance testing verifies the performance of a system meets SLA and measures the behavior of the system with increasing load (e.g., number of parallel users and/or numbers of transactions to determine what load can be handled by the system). Performance and load stress test scripts focus on testing:

- Application Response Time: The amount of time the application takes to respond to a request. Performance and load testing will verify SLAs to make sure that all the SLA requirements are met.
- Application Throughput: The measure of workload in a given time period, say per second, depending upon the load.
- Workload: The number of concurrent tasks or users the application can handle at a given time. Performance and load testing will analyze the response times of user actions for increasing workloads.

PM085

Usability/Accessibility testing

This testing occurs during the build of the SaaS solution. Additionally, as part of UAT, Cerner is committed to include usability/accessibility testing for the following user types:

- Internal users
- External users
- Power users
- Users with limited computer skills
- Prospective new users
- Users who will require application training to complete their daily work
- Users with disabilities
- Others as defined by the Department

### PM086

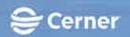
Browser testing

Our SaaS products are extensively tested and have been validated across 173 clients prior to production release. Cerner tests the most likely configurations of browser versions and operating applications, including mobile view and mobile browsers. The testing in the EDS Project is targeted towards ensuring that configuration does not introduce any defects into the EDS Project environment and that it is compatible with various browsers.

#### PM087

User Acceptance Testing (UAT)

UAT ensures that the system is generally available to a designated number of business users to verify functionality and check if all the requirements have been met. A key aspect of UAT is that it leverages the work that was performed during prior stages. This approach will help users perform UAT on all facets of the application. UAT is conducted by the user or DHHR to determine if a system satisfies the defined user acceptance criteria in the UAT environment. During planning and analysis, Cerner works with DHHR to identify which requirements will be



tested during UAT for each phase. Cerner will develop at least one test script per functional requirement. Cerner is prepared to assist in conducting UAT per DHHR request. Our testing manager monitors progress of testing and provide daily updates and reviews with testing stakeholders.

## PM088 Data conversion testing

With the sheer number of data sources, the size of the data, and the complexity, Cerner understands data migration and conversion will be a critical factor in the success of the new West Virginia EDS Project. Cerner will provide a Data Management Plan that is inclusive of all designated data sources for DHHR approval. As one of the first activities upon contract award, Cerner organizes and leads Foundation and Data Integration events with DHHR and other MMIS stakeholders to review data sources documented in the proposal, identify and prioritize any other data sources, and plan for implementation. The objective of these events is to understand data transmission, data format, and data content, which will be documented in Interface Control Documents and source-to-target mappings. Once the source-to-target mappings are in place, Cerner requests test files to begin testing extract, transformation and load routines which are used to move data and interfaces from the legacy system to the new application. Cerner will schedule meeting with legacy reporting experts to determine in scope reports and report definitions.

The interface architect monitors the ingestion of the data to ensure accurate processing. Cerner conducts data conversion testing using sample files from new data sources to ensure that the file aligns to the expected format. After full production files are loaded, Cerner will produce a data quality report for each data source to document that the volume and format of data is received as expected.

Our data plan includes a current state analysis, testing, load, reconciliation, and cleanup of data for each modification requiring the load of historical data. As data is processed by the HealtheEDW application, it goes through a series of transformation processes where it is mapped, standardized, normalized, and reconciled at a person-level into the unified, structured data set. Cerner is committed to adhering to data integrity. For example, in a 12-month timeframe, we averaged 99.7% data integrity on over 250 data sources.

## PM089 Operational Readiness testing (ORT)

Prior to go-live, Cerner will perform Operational Readiness Testing to assess all project areas for readiness to transition to production. The following image is a sample Operational Readiness Test Results, showing a sample summary analysis table.



Figure 54 Sample Operational Readiness Test Results

	ummary Analysis Findin Numbering of the table	-Sla	
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3	Project Management Data Management Testing	ACCUPANT OF THE STATE OF THE ST	TAXABLE PARTY.
2 3 4 5 6	Project Management Data Management Testing Training	A COUNTY OF THE PROPERTY OF T	TAXABLE PARTY.

# PM090 Parallel testing

Parallel testing validates the system achieves the same results as compared to another system (for example, a legacy system) or previous software version. Parallel testing is simultaneously executed on both systems, based on tests of actual data. Parallel testing is considered successful only if the parallel test results meet the expected outcome (i.e. identical results) and have been approved by DHHR. Cerner will work with DHHR to identify parallel testing scenarios that will be approved and executed prior to go-live implementation.

# PM091 Other testing as identified by the Department and/or Vendor

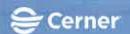
Cerner understands that DHHR's business needs are ever-changing. We will work with DHHR in good faith to identify any other testing types that need to be executed to ensure the application meets the business and functional needs of DHHR.

PM092 The Vendor should be prepared to assist the Department with User acceptance testing (UAT).

UAT is a crucial part of the testing process. Our testing team and subject matter experts will be on site during the execution of the UAT test phase per DHHR approval. During this critical time, as part of our best practices, we support test case/script execution, and log and investigate defects. Other test cases/scripts or updates needed are also identified during this time. For example, during three days of Montana's UAT testing phase, a team of six Montana users and six Cerner testers executed 59 out of 94 test cases/scripts.

PM093 The Vendor should be prepared to conduct User acceptance testing (UAT) in all cases whereby the Department does not elect to conduct UAT.

Cerner will work with DHHR to identify UAT scenarios that Cerner will need to conduct. Cerner will update the PWP to reflect the required testing resources and allocate time to conduct the identified UAT scenarios. The PWP will be submitted to DHHR for approval prior to execution of any test scenarios.



PM094

The Vendor should complete regression testing subsequent to, but not limited to, the following:

As a critical part of our SDLC, we are committed to providing extensive regression testing prior to the release of new system changes, new application components, or configurations. Extensive regression testing ensures that any previously developed and tested software continues to perform as expected and meet contractual requirements. The regression test covers all applications that may have been affected by a program change implemented during the project. Additionally, the testing process is a mandated and audited process. Cerner is committed to providing a high level of testing quality as part of our SaaS offering.

PM095

Deployment of new solution components

Cerner recognizes the importance of developing all content following SDLC to ensure production system accuracy and stability. When new solution components are developed, testing is performed to ensure functionality aligns with the specifications. If that component replaces an existing component, regression testing is performed to validate the component's passivity. Once deployed, regression testing validates the component integrates with all other components.

PM096

Integration of each solution component into the primary solution

Once a new component is integrated into the primary solution, regression testing is performed to validate the component's passivity with the core solution. The component is only promoted to subsequent environments once testing is passed.

PM097

Every migration of new build versions to each test environment

All configuration activities are performed in the configuration environment where they are unit tested. The resulting build is then promoted for integration testing in SIT and user testing in UAT. Regression testing includes functional regression test as well as regression test of content that is unchanged but dependent on the new build.

PM098

Solution fixes

Solution fixes follow the same testing process as new solution components. When new solution components are fixed, testing is performed to ensure functionality aligns with the specifications. If that component replaces an existing component, regression testing is performed to validate the component's passivity. Once deployed, regression testing validates the component integrates with all other components.

PM099

Solution patches

Solution patches follow the same testing process as new solution components.

PM100

Solution releases

For Cerner SaaS offerings, HealtheIntent Platform, and application components, internal validation occurs on behalf of all our clients via our centralized SDLC and development environments. SaaS products are extensively tested prior to production release. Our testing process includes various levels of testing, such as Unit Testing, System Testing, Integration Testing, Performance/Load Testing, and Parallel Testing which provide an in-depth testing approach to ensure that thorough testing has been completed prior to inclusion in the application. In addition, UAT is performed by partner clients to validate functionality for



innovations/enhancements. Partner clients also perform regression testing for major releases. Cerner manages testing across all development teams to ensure quality, timely, and efficient releases of application software upgrades and enhancements.

PM101

Others as defined by the Department

Cerner understands that DHHR's business needs are ever-changing and Cerner will work with the Department to address those needs in good faith as those needs arise.

PM102

The Vendor should utilize a subset of system integration testing (SIT) scenarios representative of maximum functional and technical solution coverage for the purposes of regression testing.

Following the release of new system changes or configurations, regression testing ensures that any previously developed and tested software will continue to perform as expected and meet contractual requirements. The regression test will cover all applications that may have been affected by a program change implemented during the project integration. Based on our experience to date, we built a library of test cases that can be used out of the box to begin the regression testing process. Having this existing/reusable content allows Cerner to move more quickly through the testing process. Additionally, as the testing process progresses, additional test cases/scenarios can be built to support the testing needs of DHHR.

PM103

The Vendor should obtain approval from the Department on which system integration testing (SIT) should be used for regression testing.

Cerner will work with DHHR to identify the subset of SIT that will be used for regression testing. Cerner will ensure DHHR approves of test scripts prior to execution. After conclusion of the testing type, Cerner will create a test results report that will outline and summarize the testing (e.g., number of test scripts completed, pass/fail rates, etc.).

PM104

The Vendor should utilize end-to-end test cases in support of regression testing.

End-to-end test cases are intended to identify and resolve defects on end-to-end processes and key functionalities prior to system regression testing. Once in the regression testing phase, additional end-to-end testing takes place to ensure that the previously developed and tested software continues to perform as expected and meets contractual requirements. Our current experience with state Medicaid and other projects has allowed us to identify applicable testing scenarios to provide a baseline testing approach. Additionally, Cerner is committed to working with DHHR to ensure end-to-end and regression testing is completed in a thorough and timely manner for your project.

PM105

The Vendor should perform security testing on functional, technical, and infrastructure components to ensure the solution meets all State, Department, and Federal security requirements.

Cerner uses a variety of security tools to perform both static and dynamic analysis of its applications to identify vulnerabilities. As part of Cerner's development process, these vulnerabilities are often addressed during the development lifecycle prior to releasing new code. Penetration testing is conducted by Cerner security professionals who have appropriate industry certifications and credentials. In addition, Cerner annually engages a third-party to conduct external penetration testing. As part of Cerner's vulnerability and threat management program, Cerner's security professionals analyze and quantify the risk potential of identified vulnerabilities and threats to both Cerner and its clients.



Cerner conducts continuous production scanning of Cerner's Platforms. Cerner scores vulnerabilities based upon the expected impact to the environment and external exposure. Once the vulnerability is scored, a process to mitigate or remediate the vulnerability is initiated. Identified vulnerabilities are assessed for risk and mitigated or remediated according to their severity level. This analysis includes using industry standards, such as NIST's common vulnerability scoring system (NIST CVSS), and by internal penetration scanning of environments using industry standard tools.

Once software is moved into production it is maintained through Cerner's hosting process. Cerner then regularly conducts internal assessments and undergoes external audits to examine the controls present within the Platform and Cerner's operations and to validate that Cerner is operating effectively in accordance with its Security Program.

HIPAA – Health Insurance Portability and Accountability Act of 1996—Cerner has established and maintains the necessary controls required for compliance with HIPAA (as amended by HITECH). HIPAA (internal or external) assessments take place on an annual basis and examine all appropriate corporate and client environments.

SOC 1 and SOC 2 Type II Attestations—Third-party attestations are performed on Cerner's hosted environments by measuring and testing the effectiveness of Cerner's risk mitigations related to the AICPAs Trust Service Principles relevant to security, availability and confidentiality. SOC reports are prepared under the AICPAs SSAE-18 guidelines and are specific to the hosting services and controls managed within the CTCs. Third-Party Data Centers commonly provide their own SOC reports covering their physical and environmental controls and are not included as part of Cerner's SOC audit.

ISO® 27001/27002:2013—Cerner's Information Security Management Framework (ISMF) is compliant with the principles of the ISO® 27001/27002:2013 standard and the ISMF's policies are applicable to all of Cerner's Platforms.

Penetration Attestation—Cerner annually engages a third party to perform external penetration tests against Cerner's Platforms. Cerner receives a Penetration Attestation document which describes the penetration testing performed, confirms that an industry standard methodology, testing tools and a national vulnerability database were used in conducting the penetration testing, and identifies known vulnerabilities within the Platforms. Cerner remediates identified vulnerabilities based on risk and addresses those vulnerabilities through an actively monitored plan for remediation.

PM106

The Vendor should propose security testing scenarios and/or cases to the Department for their approval.

The SaaS Platform provides the foundation for our applications to maintain the ability for RBAC. RBAC defines the application access capabilities and the type of information a user is permitted to access and view. RBAC provides controls around the access of data, based on the user's role within the organization, and is designed to protect PHI and comply with HIPAA.

HealtheEDW supports role-based security for content authors and content viewers, limiting both to the appropriate levels of security for general content and reports. This allows users to create the content and the reports for either themselves or for less technical users who will only view the content. Roles define user access to control projects, data models, and data sets as well as the permissions within the role. Our experience has determined clients typically require three



key roles, which are designed to meet the RBAC access of DHHR: Owners, Collaborators, and Consumers.

During the testing phase of the project, Cerner will collaborate with the Department to define and approve testing scenarios that are applicable to the specific role-based security processes and functionalities of DHHR.

PM107

The Vendor should supply, on an annual basis, a report of the results of a security risk assessment, including all tools used for the assessment, and an action plan detailing the approach for remediation of security risk vulnerabilities.

Cerner regularly conducts internal assessments and undergoes external audits to examine the controls present within the HealtheIntent Platform and Cerner's operations and to validate that Cerner is operating effectively in accordance with its Security Program. Cerner can provide information regarding our annual HIPAA (internal or external) assessments, as well as the third-party attestations that are performed on Cerner's hosted environments by measuring and testing the effectiveness of Cerner's risk mitigations related to the AICPAs Trust Service Principles relevant to security, availability, and confidentiality. Additionally, Cerner can provide an attestation letter from our independent testing partner that performs external penetration tests against Cerner's Platforms.

Cerner remediates identified vulnerabilities based on risk and addresses them through an actively monitored plan. Cerner can provide further details and will cooperate with DHHR to develop a remediation plan if identified vulnerabilities could impact DHHR.

PM108

The Vendor's performance testing methodology should allow for performance tests to be representative of the expected peak period volumes for solution operation.

Performance testing verifies the performance of a system will meet SLAs and measures the behavior of the system with increasing load (for example, number of parallel users and/or numbers of transactions to determine what load can be handled by the system). As part of engineering development, Cerner executes extensive performance testing. In our SaaS environment, we manage testing spikes in performance gracefully because, at any moment in time, we are allocating hardware across hundreds of clients and potentially thousands of users, allowing us to test holistically and not just a specific client or number of users.

PM109

The Vendor's performance testing should occur on a production ready version of the solution.

Cerner currently has 3337 nodes which have processed or stored over 20 PiB of data. We also conduct performance testing as part of the SDLC of each major release to ensure high performance for DHHR's specific configuration. Performance testing is conducted in an environment that mirrors the production environments. Data volume, transformations, reports, and other content as well as hardware all mirror production.

PM110

The solution's performance testing environment should mirror the final production solution specifications.

Performance testing is conducted in an environment that mirrors the production solution in data volume, processing load, and other content characteristics to allow for additional performance testing.



PM111

The Vendor's usability/accessibility testing should include testing of the user interface for the following users:

Cerner will work collaboratively with DHHR to create clear and concise test objectives as well as detailed test cases/scripts for each functional requirement. Additionally, we will provide precision around the overall testing process. The clarity of our test cases/scripts enable stakeholders/users at various levels within DHHR to perform with ease. Test cases are designed and documented based on the type of stakeholder/user and the type of workflow. DHHR will approve test cases/scripts before any execution begins.

The dedicated User Experience (UX) team ensures the applications are easily usable, ensuring the workflows are easy to use and appropriate to the skill level of the corresponding workflow. The Department defines the workflows for your users at various levels and with various needs. Cerner will work with the Department to ensure test scripts cover the required workflows and user levels.

### PM112

Internal users

The Department will have access to our library of existing test scripts. These test scripts are configured based on the functionality and client-specific workflow. Our test scripts are written for the core user base, the DHHR team, to ensure the application meets the essential role functions with ease.

#### PM113

External users

Cerner writes test cases to support external users on an as needed basis, based on workflow and functionality that needs to be tested. A subset of test scripts are geared toward specific tasks or functionality on which DHHR will engage external users. For example, in Montana, the Department exposes data to providers who provide care for Medicaid members. A test script walks through the steps an external provider would follow to access the application, see an overview of the members they serve, and drill down to see the data for a specific member.

#### PM114

Power users

Cerner will work with DHHR to identify test scenarios applicable to power users. A subset of test scripts are written for sophisticated analytics users. For example, our test scripts include clear and specific steps on how to create a predictive algorithm with our HealtheDataLab application. As part of our security testing, we supply test scripts to demonstrate role-based security intended for Department administrative users who are managing personnel.

### PM115

Users with limited computer skills

Cerner is committed to supporting clear, concise, and detailed usability and accessibility testing documentation and processes to users with various skill levels, including users with limited computer skills. We empower clients to create content for these various levels of users. We support thousands of users who process test cases/scripts without detailed computer skill training. We pride ourselves on delivering a system that allows any qualified user to execute our test scripts.

#### PM116

Prospective new users

Cerner is committed to supporting clear, concise, and detailed usability and accessibility testing documentation and processes to users with various skill levels, including prospective new users.



We empower clients to create content for these various levels of users. We design our test scripts to be accessible to a user who has potentially never used the application before. In Montana, feedback from the Department was that the test scripts were detailed and precise, allowing new members to the project team to successfully execute the test scripts following basic training.

PM117 Users who will require solution training to complete their daily work

Standard training is included as part of testing activities. Cerner will work with DHHR to identify workflow and testing scenarios to support users who will require application training to complete their daily work.

PM118 Users with disabilities

Cerner is dedicated to developing electronic and information technologies (EIT) that are accessible to people with disabilities. Our goal is to provide users with disabilities the same user experience and access to the same information as other users. Because inaccessible technology interferes with the ability to obtain and use information, various government regulations have been enacted to eliminate certain barriers in information technology (IT) while encouraging the development of accessibility standards. As a health IT provider, Cerner is committed to promoting the safe operation of our applications and recognizes that accessibility compliance maximizes the value our applications offer for clients. Cerner recognizes the importance of accessibility and has committed to making Cerner applications accessible to all end-users through conformance to accessibility standards and incorporating accessibility design principles. Cerner has a user interface team that sets standards for applications and user interfaces following ADA 508 compliance guidelines.

PM119 Others as defined by the Department

Cerner understands that DHHR's business needs are ever-changing and Cerner will work with you to address those needs in good faith as those needs arise.

PM120 The Vendor's usability/accessibility testing approach should account for testing for compliance with sections 504 and 508 of the Americans with Disabilities Act (ADA).

Cerner has a current VPAT on file for HealtheEDW and HealtheRegistries. HealtheEDW has been fully compliant with the US Rehabilitation Act Section 508 since September 2017. Cerner is continuously striving for full compliance of our applications with the US Rehabilitation Act Section 508, the ADA and non-discrimination 504, and understands the importance of the regulations. Cerner will communicate with the Department regarding any non-compliant areas and offer contingency plans to prepare for any impacted users.

PM121 The Vendor's browser testing should be performed using a minimum of a subset of system integration test scripts that ensures maximum solution coverage.

Testing in the EDS Project is targeted towards ensuring that configuration does not introduce any defects into the EDS Project environment and that it is compatible with various browsers. The elements that Cerner configures for DHHR use the SaaS functionality. We do not introduce any new risk through configurations. Testing ensures that any configuration for any client will not introduce browser incompatibilities.



PM122

The Vendor should supply the data, environments, and test scripts necessary to support user acceptance testing (UAT).

UAT is a crucial phase of the testing process. As part of our testing methodology, we provide the data, environments, and test cases/scripts, as well as the execution of test cases/scripts. Testing performed in UAT mirror production solution in terms of data volume, processing load, and all other content characteristics to allow for full testing support.

PM123

The Vendor should work with the Department to define user acceptance testing (UAT) cases representative of the full solution environment.

Throughout the testing process, we are committed to collaborating with the Department to understand your workflow, objectives, and expectations for each UAT test. Based on the goals of each project phase, Cerner will work with the Department to define UAT cases. Cerner will facilitate an event with the objective of refining UAT cases for each phase. When testing scenarios are identified, Cerner will write UAT scripts and submit to DHHR for review and approval prior to entering UAT scripts into the testing suite.

PM124

The Vendor should be responsible for working with the Department to define the user acceptance test (UAT) scenarios the Department deems as critical for UAT.

Cerner is committed to collaborating with the Department to define and document UAT scenarios, including scenarios deemed critical for UAT. We have extensive experience in working with clients to identify the needs/expectations, make our recommendations, and ultimately result in a UAT scenario that is finalized and reviewed and approved by the Department.

PM125

The Vendor should be responsible for drafting all user acceptance testing (UAT) cases.

As part of our testing methodology, the testing team drafts UAT cases that have been identified with DHHR.

PM126

The Vendor should review all user acceptance testing (UAT) results with the Department, and a strategy for mitigation should be agreed upon for each defect based on the defect's severity, priority, and impact.

Cerner provides far-reaching UAT support, including onsite assistance, collaboration via an open bridge line, daily reviews of testing activities, and reviews of logged defects. Throughout the event, the test manager reviews and analyzes defects or issues logged for criticality and impact to overall project and go-live. We work any defects/issues based on the priorities set by the Department. All issues and associated information are easily reviewed on the Project Portal. While the Department is responsible for executing tests, Cerner provides responsive and proactive guidance.

As part of our testing methodology, Cerner will work with DHHR to define success criteria for UAT, including critical UAT scenarios and definition of severity of defects. During the UAT event, the test manager conducts daily reviews of testing activities, results, and defects. The objective of the review is to provide transparency of all testing activities. DHHR will additionally have access to test results via testing tools. Daily reviews provide test team members an opportunity to review specific test results and collaborate with DHHR to define the severity/priority of each defect and the proposed mitigation plan. The overall process includes the following steps:



- Define criteria for defect severity, priority, and impact
- Define success criteria (critical UAT scenarios and resolved high/critical defects)
- Daily review of results, including defects reviewed/assessed
- Provide access to results

After the completion of UAT, a UAT Test Results Report are provided to DHHR for review and approval. Additionally, as part of the UAT exit criteria, Cerner will provide a UAT results letter that includes test scenarios and cases executed, test results including evidence, list of issues and defects identified during testing, list of defect resolution and other processes used to ensure completion of the testing, and evidence that all defects that impact readiness or final release have been resolved.

PM127

The Vendor should discuss and obtain the Department's approval on data conversion exception tolerance levels prior to the commencement of data conversion testing.

During the Initiation Phase, we conduct a Data Integration event with DHHR. During the Data Integration Event, DHHR will set the data conversion exception tolerance level prior to any data conversion and testing. After each data source has been ingested, we will produce a Data Quality Report for the source. The Data Quality Report validates the data at a high-level and include the tolerance levels. The following image is a sample results table from Cerner's Data Quality Report template.

Figure 55 Sample Reporting from Data Quality Report Table 2. Detailed validation results

File Name	Validation Data Set Name	Load Strategy	EDW Row Count #	Source Row Count #	Count Difference	Status
CIMBAII	MENIS CLM BALANCE				1	
ciméstail	MMS_CLM_DETAIL					
climiting	MMS_CLM_DRUG					A O PARK BOOK BLACK AT
clmexcep	MMIS_CLM_EXCEP					

In the state of Montana, the Data integrity error rate and routing errors of transactions is less than .001%.

PM128

The Vendor should review and obtain the Department's approval of data conversion test results prior to commencement of production data conversion.

In our Data Quality Report (data conversion test results), we summarize the results of the initial load. There are many potential sources of data quality discrepancies, including source system limitations. Cerner will work with DHHR and data source vendors to review data conversion test results and achieve the highest quality of data possible per data source. Cerner has data ingestion templates for 1000+ systems, allowing us to jumpstart the conversion process. For example, we will leverage an AETNA MCO mapping that has been used in another state for the West Virginia EDS Project. Through this previously completed work, we have already resolved many quality issues, allowing us to work more quickly through the process for DHHR.

PM129

The Vendor should propose a source code management tool for review and approval by the Department.

SaaS products and applications are designed, developed, and licensed by the vendor. As a SaaS offering, while the state is not entitled to ownership rights of the core program (which includes source code), code related to content configuration changes (i.e. changes to data



models, reports, and custom algorithms) will be produced as formal project deliverables for DHHR review.

PM130

The Vendor should work with the Department to define an operational readiness testing (ORT) approach that encompasses all Department and Vendor responsible solution operational processes and procedures.

Prior to go-live, Cerner will perform Operational Readiness Testing to assess all project areas for readiness to transition to production. Cerner uses an Operational Readiness Checklist to conduct an assessment that all aspects of the project are ready for the release to the production environment. Cerner will schedule and lead an Operational Readiness walk-through to review the Operational Readiness Checklist and Test Results with DHHR.

Operational Readiness Test results demonstrate that the application meets all requirements needed for implementation and SLAs. The images below depict a sample summary analysis table from the Operational Readiness Test results.

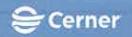
Figure 56 Sample Operational Readiness Testing Summary Analysis

Va.	ummary Analysis Findin Numbering of the table	iAs	
fasi	Name – Major readiness task	3	
Stati Stati or Cr mple	lysis – Summary analysis of mineral us; ( , , , , , , ) = A green, ye such task. Green molitation all of ementation. Yellow indicates thore subtasks were red.	draw, or red symbol indicate the subtasks were green.	es the going go recommendate and thate is nothing impeding
No	Task name	Analysis	Status (green, vellow, or red)
No.	Project Management	Analysis	vellow or red)
1	1173-117-117-117-117-117-117-117-117-117	Analysis	De-Drosponon-Bull-10 person
1	Project Management	Analysis	vellow or red)
1 2 3	Project Management Data Management	Analysis	vellow or red)
1 2 3	Project Management Data Management Testing	Analysis	vellow or red)
	Project Management  Data Management  Testing  Training	Analysis	vellow or red)

PM131

The Vendor should propose and execute a plan for a phased approach to the solution's development, including all of the solution's components and modules.

Cerner proposes a phased approach, with three releases, to deploy all necessary solutions and components. Our project team will work with the DHHR to review and approve the phased approach for implementing the applications needed to satisfy the requirements documented in the RFP. The following timeline reflects the phased approach that we propose for the DHHR EDS project:







Cerner has provided an initial Work Plan in Attachment E that reflects all tasks and milestones needed to implement the applications in each phase.

PM132 The Vendor should propose a solution development plan that includes but is not limited to the following elements:

Development and testing for the Solution as a Service Platform includes the elements listed below as part of our standard internal development process. New software development primarily uses a Scrum/Kanban hybrid that produces working code at the end of each iteration that becomes a release candidate. Release candidates that meet functional and performance quality standards are made available to clients. In general, new functionality is released to application partners who collaborate on the development and then client-side testing.

The application partners then take the functionality into a production setting and then the code is released to all Cerner clients. Corrections typically leverage a Kanban/Lean process where completed development is made available in the next release. This approach increases the speed and quality of each item as well as more flexibility to deal with changes in priorities before development starts. Emphasis in either model is built on client collaboration and increased speed to adoption to help meet evolving client needs.

We leverage a user-centered design methodology for applications to optimize end-user experience and productivity. The software development process currently incorporates best practice guidance during the user interface requirement definition, review, and testing phases. The development teams follow human factors standards defined by our User Experience team. These standards include definition of the proper use, appearance, behavior, and technical usage of user interface elements that make up Cerner applications. The objective for these standards is to develop a consistent, extensible, technically sound, and visually appealing design to build intuitive, efficient applications. The User Experience team consists of a dedicated team of Interaction Designers and Usability Researchers. This core team defines the strategy for user-centered design methodology by incorporating the latest research and testing of applications across development teams. The UX team accomplishes this by evaluating current designs against common heuristics, UI standards documentation, on-site clinician



workflow shadowing, iterative research and design feedback from clinicians, and conducting formative/summative usability testing. The Usability Researcher and the application engineering team evaluate client feedback and metrics gathered during usability testing to iteratively incorporate design enhancements back into the development cycle.

Software development processes are designed to maintain compliance to industry regulations and standards including, but not limited to the following: Cerner Quality System Regulation (QSR), current Good Manufacturing Practice (cGMP), FDA regulation 21 CFR Part 820, Unique Device Identification, Regulation EU 2017/745 (MDR), and International Organization for Standards (ISO®) 9001:2015 and 13485:2016). In addition to development, Cerner will configure and/or build reports, ETL, and other functionality for the EDS Project on the foundation the HealtheIntent Platform. Configuration, and testing of each requirement for the EDS Project will be reviewed during our Requirements Validation session and the proposal for meeting each requirement will be approved by DHHR. Upon approval, Cerner will collaborate with DHHR to group requirements and prioritize configuration, in line with the goals and expectations of the project. Once the work has been prioritized, Cerner will create user stories and assign them Agile development teams.

# PM133 Code base management

Code that comprises the SaaS Platform is managed via process Cerner Quality System Regulation which is based on Good Manufacturing Practice (cGMP), FDA regulation 21 CFR Part 820, Unique Device Identification, Regulation EU 2017/745 (MDR), and International Organization for Standards (ISO®) 9001:2015 and 13485:2016). To support these processes code is managed with GitHub an industry leading code base management tool used by 2.1M businesses worldwide. GitHub supports standard quality control processes such as code repository, branching, code review, code security, code packaging and deployment. Similarly, the majority of configuration is managed directly in the Platform to support content repository, content review, content security, content packaging and deployment.

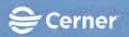
## PM134 Source code security analysis

Cerner uses a variety of security tools to perform both static and dynamic analysis of its applications to identify vulnerabilities. As part of Cerner's development process, these vulnerabilities are often addressed during the development lifecycle prior to releasing new code.

### PM135 Development standards

For Cerner SaaS offerings, the HealtheIntent Platform and its application components, internal validation occurs on behalf of all our clients via our centralized SDLC. SaaS products are extensively tested prior to production release. The testing process includes several phases of testing, including Unit Testing, Integration Testing, System Testing, and UAT. Together, these provide an in-depth testing approach to ensure that thorough testing has been completed prior to release. Cerner manages testing across all development to ensure quality, timely, and efficient releases of application software upgrades and enhancements.

Additionally, the testing process that is performed by our development groups is a mandated and audited process. All development groups are required to maintain a certain level of quality, based on the auditing. Cerner is committed to providing a high level of quality testing as part of our SaaS offering.



PM136 Individual developer machine configuration requirements

There are many developer machine configurations for developers on the HealtheIntent Platform. These requirements are developed and maintained by the teams responsible for the products and components. These requirements would include configurations and options for Integration Development Environment (IDE), dependencies and their versions, and any local setup of those dependencies. All configuration activities are executed within the HealtheIntent Platform via web-based access. As such, the configuration of the local computer does not impact configuration.

PM137 Build machine configuration requirements

Requirements for building and deploying the products and components are developed and maintained by the Cerner teams responsible for the products and components. These requirements include dependencies and their versions and are defined and managed using tools (e.g., Jenkins and/or Spinaker). Unit and Integration testing validates build versions within each test environment, and System testing validates regression of the complete workflow for a product. All configuration activities are executed within the HealtheIntent Platform via webbased access. As a SaaS offering, we maintain all technical configuration to ensure configuration workflows function as designed.

PM138 Code check-out and check-in procedures

Developers follow a standard development workflow. Each product and component has its own repository where a master branch is always in a stable, deployable state. For each project, a new branch is created where work is performed (develop, test, review). After work is done and unit tests pass, a pull request is made and a code review is performed. When approved, the branch is merged into the master branch. All configuration activities are performed directly in the system. At no point does the configuration leave the system which ensures stability. As configuration is updated, version history is automatically maintained.

PM139 Developer tool expectations

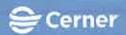
Tools used within the development process that produce, modify, or store process artifacts or that are used as part of the management of Cerner applications or client environments are validated internally before use to ensure quality and reliability of the output. All configuring activities are executed within the HealtheIntent Platform via web-based access. As such, unique developer tools are not required for Cerner of DHHR users to configure the system. The only exception is the optional use of Tableau Desktop to configure reports with additional advanced options that Tableau's web-based developer does not support.

PM140 Others as defined by the Department

Cerner understands that DHHR's business needs are ever-changing and Cerner will work with you to address those needs in good faith as those needs arise.

PM141 The Vendor should develop the solution using an iterative development approach.

Cerner will use Agile methodologies for development, configuration, and implementation of DHHR EDS project. For requirements that have been approved via the requirements validation session, Cerner will create user stories and assigned them to the agile teams. The project manager will track progress toward the completion of the user stories and will report on progress in the weekly/monthly status updates.



PM142

The Vendor should review and test in logical functional groups of system components or modules.

Cerner's testing methodology involves five key activities: requirements analysis/review, test planning, execution, verification, and management of the testing effort. The testing plan/approach is planned in logical functional groups of system components and modules. Testing activities on different system components and modules often happen in parallel.

PM143

The Vendor should ensure that all design documentation is kept current throughout the contract.

Cerner understands the importance of maintaining detailed documentation throughout the life of the project. Cerner's Documentation Management Plan will outline the process for making updates to documentation. The PWP will maintain the milestone dates for documentation delivery. Cerner's PMO conducts monthly retrospectives of all deliverables to ensure that the content is current. Cerner will work with the Department on any necessary documentation updates not noted in the PWP.

PM144

The Vendor should support all data conversion related activities.

Data conversion, data migration, implementation, and support services are included in our Data Management process. We will leverage our proven project management methodology, Medicaid Deployment Methodology, to manage and execute all requirements for the Department. All data conversion activities will be planned and documented in the PWP.

PM145

The Vendor's data conversion strategy should minimize risk and the disruption to other enterprise solutions affected with the solution's development and implementation.

Cerner is committed to minimizing risks and disruption during the data conversion process. Cerner will follow the approved Risk and Issue Management Plan to identify risks and produce mitigation strategies early and throughout the project lifecycle. Cerner will work with the Department's project management vendor and all other vendors to mitigate any risks or issues that have been identified. Cerner ingests and sends data via open APIs which allows us to work with other enterprise solutions in exchanging data while managing risk and disruption. Cerner's project manager will report all identified risks in weekly/monthly status reports well in the Risk Review Board meetings.

PM146

The Vendor should be responsible for the data cleansing of all data being migrated from the existing data warehouse decision support system (DW/DSS) and converted to the new solution.

Cerner is committed to collaborating with DHHR to define an approach for cleansing data to prepare it for loading in the proposed application. This approach is refined as necessary throughout the conversion process. We work with DHHR SME's and legacy DW/DSS stakeholders during the migration and cleansing events to conduct detailed validation. The same data quality monitoring services are applied to migrated data as are applied to all new data sources. Data Quality Monitoring includes programmatic data quality checks that identify data quality issues related to missing files, inaccurate row counts, file volume, volume trending abnormally up/down, data trending, null values, invalid codified values, improperly formatted data, suspect data and integrity checks. For more details, please refer to the *Data Quality* section in Attachment H: Technical Specifications Approach located in the technical proposal. Data Quality Monitoring technology and services ensure that each data source is loaded with high quality.



Once the raw data is loaded, the data goes through a structured process where the data is mapped to data models within Cerner's HealtheIntent Platform. This mapping facilitates data analysis across multiple sources and includes data standardization, normalization and person matching. The resulting longitudinal record allows analysts to focus on analysis rather than the intricacies of each data source.

PM147

The Vendor should propose an industry standard data conversion methodology that includes but is not limited to:

Cerner is committed to developing, submitting, and maintaining a Data Management Plan and data management strategy that supports integration, optimization, quality, stewardship, standards (including industry standards), and governance of data. Data migration and integration strategies and a well-formulated plan are critical for a successful implementation of the DHHR EDS project. Cerner recognizes that each source system may have different file transfer mechanisms (APIs, direct connections, EFT, SFTP, EDI) and formats (file structures, code pages, languages, file formats). Our methodology accounts for the variations in data sources. As each source system is identified and documented following the Data Integration event, we will incorporate the source data tasks and activities into the PWP.

#### PM148

Data analysis techniques

As part of our commitment to DHHR, we support a framework which automatically looks for anomalies based on the checks and balances provided within the data conversion process. Data quality monitoring provides one centralized tool that offers data quality profiling abilities for content, quality, and structure of data. For example, we can identify a member birthdate of 1800 as a content issue, invalid ICD-10 code(s) as a quality issue, and duplicate claims service lines as a structural issue. For more details, please refer to the *Data Quality* section in the Attachment H: Technical Specifications Approach located in the technical proposal.

### PM149

Checks and balances for ensuring data quality and accuracy

Data quality monitoring consists of both automated and manual capabilities to maintain data integrity, consistency, accuracy, and timeliness of the application data. Automated data validation routines ensure data loaded is consistent and complete as compared to the balance files. We provide a library of over 150 quality checks and are continually adding to this number. Throughout the data conversion process, Cerner works collaboratively with DHHR and makes recommendations based on the checks and balances available, to ensure data quality and accuracy.

PM150

Data conversion tool sets

Data conversion tools support configuration, validation and deployment including all major phases:

- Data extraction: Extraction technologies vary based on the abilities of the source system.
   Common technologies include extracts based on industry standard extracts, standard source vendor extracts or unique SQL-based extracts.
- Secure data transfer: Cerner exposes API options to securely transfer data. These APIs are
  proprietary and were developed to go beyond common sFTP option to comply with high
  security recommendations required by CMS.
- Mapping and transformation: Cerner developed proprietary mapping technologies based on the common data formats as well as options to map highly unique data. These mapping



technologies have been proven across over 1000 data sources. In addition, the mapping technology supports templates which allows Cerner to leverage past experiences to more quickly and accurately load data sources.

- Data validation: Data ingested undergoes a data validation process to ensure data quality at initial historical load, and that quality is maintained throughout the life of the contract. The system performs checks against incoming data sets to validate the data against the balance files. Records that fail validation are centrally monitored by a Cerner team that provides services to evaluate issues as they arise. This team investigates, makes recommendations, corrects or resolves the issue, creates service records as needed, and works closely with DHHR to ultimately resolve the issue.
- Deployment: once the data source is fully validated and approved, mappings are pushed to production via an automated process.

PM151

The Vendor should complete a full analysis of the Department enterprise to understand what source solutions and corresponding data will need to be integrated into the solution.

During the Initiation Phase, Cerner conducts Data Integration events to identify the source applications and data that will need to be integrated. Cerner will work with DHHR on the priority for each data source and this will be reflected in the PWP. Cerner has extensive experience in a wide range of sources. This experience helps us to make recommendations regarding the data that will bring the most value to the Department.

PM152

The Vendor should complete an assessment of the as-is and to-be environment to understand what reports will be needed in support of operations.

The following is an outline of our process regarding as-is and to-be assessments:

- Cerner has experience with many data sources and many types of analysis (for example, from other states, commercial payers, healthcare, and academic clients). We will make recommendations based on our constantly evolving standard library.
- 2. Cerner will work collaboratively with the Department regarding your unique use cases and recommended reports.

Additionally, operations reporting will include operations monitoring (data quality), request tracking (service requests for new reports, ETL), and other logistical reporting to ensure smooth operations.

PM153

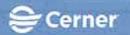
The Vendor should develop and obtain Department approval of all reports identified as needed in support of operations.

The process for Operations is very similar to DDI with reports specifications created and approved by the Department. Our process is to log, track, and prioritize operations report requests in eService.

PM154

The Vendor should be prepared to work with the Department to identify and integrate data from the Department-identified primary source solutions.

During the Initiation Phase, Cerner conducts Data Integration events to identify the source applications and data that will need to be integrated. Cerner will work with DHHR on the priority for each data source and this will be reflected in the Project Work Plan. Cerner has extensive experience with the sources listed (e.g., HIE, Behavioral Health, SDOH, immunization, and EHR). We have extensive experience in a wide set of sources. This experience helps us to make recommendations regarding the data that will bring the most value to the Department.



PM155

The Vendor should propose and manage a process by which data from additional solutions can be identified and integrated into the Enterprise Data Solution (EDS).

Cerner is proposing a three-release approach to the Work Plan which incorporates the data sources listed in the RFP. The approach allows flexibility to adjust to integrate data identified by DHHR as the top priority. All sources will be loaded in accordance with our data quality monitoring services which include programmatic data quality checks, follow up services to resolve issues and Data Quality Reports which documents data quality. Likewise, the operations phase includes support for loading additional data sources. All operations requests, include data source additions, are logged as a Service Request into Cerner's system. These requests are prioritized by DHHR and follow the same process as described above. Our clients are frequently modifying and adding new data sources as new use cases arise and our staffing plan accounts for these needs. Additionally, we leverage our experience loading over 1,000 data sources to load data more quickly and with higher quality.

PM156

The solution should have the ability to support quality measures as defined by the Department.

The quality planning process defines and develops the quality process descriptions, standards, and procedures that are applicable to the project phases and will be documented in the Quality Management Plan. During quality planning, Cerner will document how the project will demonstrate compliance with quality standards. The requirements established by DHHR and Cerner will drive internal development of quality measurements and standards. The Quality Assurance Manager ensures the project is adhering to all quality measures and will report to the Department on any discrepancies. The Quality Assurance Manager works with SMEs to produce a plan resolve or mitigate any discrepancies and will implement DHHR-approved mitigation plans.

#### 1.1 Work Plan

The Vendor's proposal should supply a narrative describing the Vendor's proposed processes and methodologies for providing the scope of work described in this RFP. Include any assumptions as well as the Vendor's approach to meeting the Initial Work Plan. The Vendor should include detail sufficient to give DHHR an understanding of how the Vendor's knowledge and approach will:

- Manage the work
- Guide work execution
- Document planning assumptions and decisions
- Facilitate communication among stakeholders
- Define key management review as to content, scope, and schedule

The Vendor should also submit an Initial Work Plan in *Attachment E: Initial Work Plan* that demonstrates that the Vendor has a thorough understanding of the scope of work and project requirements.

The project manager will create a PWP guiding the EDS project through all phases beginning day one of the contract. Cerner is committed to seamless transition from one phase to another and will ensure that all project team members are engaged as needed. Schedule management is vital to the project as it will be the foundation for all milestones and dates of tasks. The PWP design begins during the initiation phase and is solidified in the planning phase. During the Kickoff and Engagement, Foundation, and Data Integration events, Cerner will document the



assumptions and decisions made about content, scope, and schedule. Scope definition will ensure sufficient detail is included such that:

- All known project work has been identified
- Appropriate management controls can be applied
- A Work Breakdown Structure (WBS) is developed

Scope changes include modifications to the project scope. Scope changes usually require adjustment to time, quality, or other project objectives. Therefore, scope changes must go through the defined project change management process. The Cerner Project WBS is a hierarchical grouping of work to be carried out by the project team to fulfill the stated requirements in the RFP and deliver the functionality for the DAPH Project. The WBS provides the high-level structure from which the detailed PWP is built.

#### **PWP Management**

The PWP reports current information on schedule performance to management and is used for reporting on SLAs related to scope of work tasks, activities, deliverables, and events with specific completion dates. On a weekly basis, the project manager reviews all activities in the PWP and updates the plan as necessary based on approved change requests. The most current PWP will be stored on the Project Portal. The project manager will review the PWP in weekly and monthly status meetings.

### **PWP Baseline**

Upon approval of the plan by designated DHHR stakeholders, Cerner creates a PWP baseline, a version of the schedule that is the standard against which future schedule performance will be measured. This comparison will identify areas of schedule slippage requiring corrective action to ensure the project remains on track.

Because the PWP baseline will be used throughout the project for measuring actual performance against planned tasks, the project team must review all aspects of the PWP before the baseline is finalized. Activities, their dependencies, and their resource requirements must be reviewed to ensure milestones and other dates are realistic and achievable, and that resources are not over-allocated. The PWP's critical activities—those that define the longest continuous path through the project and determine its finish date—should be carefully examined to confirm that there is no negative float (indicating the project is already behind schedule, or constraint dates are not satisfied). This final examination of the PWP may take several iterations as activities, their sequencing and duration, inter-project dependencies, and resource requirements are reviewed and adjusted to achieve a baseline that is optimized for the EDS Project.

## Critical Path Analysis

Cerner employs the Critical Path Method (CPM), to predict project duration by analyzing which sequence of activities has the least amount of scheduling flexibility (the least amount of float). This analysis will review the PWP to see if or how the critical path is changed and to see if a change to one activity has impacted (either positively or negatively) a dependent activity or resource. The duration of the activities on the critical path controls the duration of the entire project; a delay to any of these activities will delay the finish date of the entire project. For this reason, it is essential that critical path activities for each sub-component be identified and



changes to them be more closely monitored and managed than non-critical activities. The project manager is responsible for monitoring the critical path and reporting critical path status to DHHR during weekly and monthly status meetings.

#### **PWP Variance**

PWP baselines are used both for analyzing project progress at a summarized level, and for analyzing schedule variance for individual activities. The status of PWP management milestones are reviewed and analyzed by the project manager.

## 1.2 Issue Management

The Vendor's proposal should describe the Vendor's process for issue management including: issue logging, resolution, tracking of unresolved problems, escalation procedures, closeout, and reporting practices. The Vendor should describe its proposed approach for integration of issue management across sub-contractors, if applicable, as well as other State and Vendor project stakeholders. The Vendor should also detail any planned use of an automated solution to support issue management.

Please refer to the following Section 1.3 for our response to this section.

## 1.3 Risk Management

The Vendor's proposal should describe the Vendor's risk management practices, the expected risk areas, and mitigation plans. In addition, the response should elaborate on the Vendor's internal risk management plan. This should include reference to the use of any specific methodologies, as well as any specific tools being used.

The risk management plan should outline the process, by which, cyber risk management activities are conducted to identify, assess, communicate, and manage shared cyber risk. The Vendor should provide this prior to the first implementation of the Vendor's hosted solution.

Risk and issues are inherent to any project or program. These risks and issues could have significant impact if there is not adequate risk and issue management. Cerner utilizes project management best practices, lessons learned, as well as PMI and CMS frameworks to develop our Risk and Issue Management Plan starting in the initiation phase and continuing through all phases of the project. We will collaborate with the DHHR project management vendor to ensure our Risk and Issue Management Plan is in accordance with DHHR Project management vendor's approved templates and methodology, and we will submit the plan to DHHR for review and approval.

Cerner's PMBOK®-aligned approach to risk and issue management includes for identifying, analyzing, and monitoring risks and issues. Cerner leverages the definition of risk and issues from PMBOK®. Risk is defined as an uncertain or unexpected event or future situation that, if it occurs, may negatively affect the project as perceived by its stakeholders. Issue is defined as a current condition or event that may impact the expected results or objectives of the project. The Risk and Issue Management Plan describes all planned processes and responsibilities to routinely perform identification, analysis, mitigation planning, and control activities throughout the life cycle of the project. Risk and issue management aims to increase probability of successful project outcome and reduce the overall project impact.

The objectives of risk and issue management include the following:



- Provide response plan(s) for high severity risks or issues if deemed appropriate
- Provide contingency plans for high severity risks or issues, as necessary
- Communicate and solicit input from all organizational units to expand coverage of risks or issues
- Adopt standard practices for risk and issue management
- Reduce the risk tolerance value (high to low) to the project
- Execute response plan(s) to lower the impact, should it occur

Our project team manages risks and issues specific to the EDS Project. The Enterprise Security team manages assessment of cybersecurity risks at the Platform level.

Computer Security Incident Response Center (CSIRC)

Cerner's Computer Security Incident Response Center (CSIRC) is the control center for security incident event management and is responsible for 24x7x365 continuous threat monitoring of Cerner's Platforms. The CSIRC team ingests and coordinates responses to international, federal, and tech industry threat intelligence information, in an effort to safeguard Cerner environments. In addition, the team leverages industry standard tools to systematically analyze logs to identify potential unauthorized activity and focus on potential threats.

#### Security Incidents

Cerner maintains a security incident management process to investigate, mitigate, and communicate system security events occurring within a Platform. Impacted clients are informed of relevant security incidents in a timely manner and advised of recommended corrective measures to be taken.

## Security Event Management

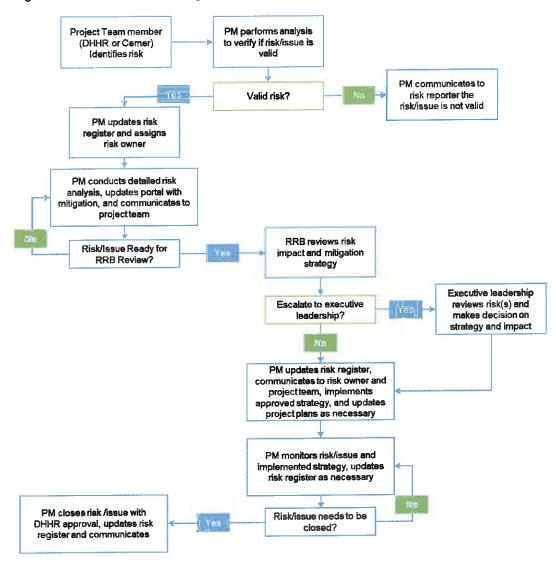
Cerner does not notify clients or publicly speak about "named" vulnerability events (e.g. WannaCry, Heartbleed, and ShellShock). Cerner will engage in private discussions if clients have questions about Cerner's approach to specific events.

Cerner is prepared to deliver the latest risk assessment results to DHHR prior to the first implementation. Risks identified during the security risk assessments will become inputs to the risk and issue management process and the project manager will serve as the central point of communication.

The Risk and Issue Management Process diagram in the following figure documents the process for managing a risk or issue.

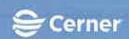


Figure 58 Risk and Issue Management Process



#### Risk and Issue Identification

Risk and issue identification will occur throughout the life cycle of the project (from the time contract has signed until the conclusion of the contract) and by any member of the project team (Cerner or DHHR). The project manager will begin analysis of potential risks or issues as soon as he or she has been assigned to the new contract/project. Identifying risks or issues as early as possible will help the project manager and project team put in a place a mitigation plan per risk or issue to limit the negative impact on the project and will help prevent escalation downstream. For instance, upon award of the Montana project contact, the project team met internally to identify potential risks and issues and presented them to the Department for review and approval during the Kickoff and Engagement event. Basic information about each risk is gathered and submitted to the project manager or logged directly within the Risk and Issue Log found on the Project Portal. The Risk and Issue Log will be maintained throughout the project, and the project manager will report on open risks and issues in the weekly and monthly status reports.



## Risk and Issue Analysis

The project manager will conduct an analysis of the risk or issue, using techniques that include but are not limited to team meetings, brainstorming, interviewing, historical analysis, SME analysis, and assumption analysis. The purpose of analysis is to bolster the risk or issue definition so that it becomes decision-making information. During this process, and as illustrated in the following table, risks and issues are analyzed in detail to classify them, to assess the degree of a risk or issue, to identify which risks and issues are most important, and to determine how various risks and issues relate to each other. Risk and issue analysis encompass evaluation of priority as well as outcome and exposure. Probability and impact interact to determine risk priority.

Table 32 Algorithm for determining risk priority

Probability	Impact				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain	Significant	Significant	High	Very high	Very high
Likely	Moderate	Significant	Significant	High	Very high
Moderate	Low	Moderate	Significant	High	High
Unlikely	Low	Low	Moderate	Significant	High
Rare	Trivial	Trivial	Moderate	Significant	Significant

Risk and issue analysis have five basic activities:

- 1. Evaluating the quantitative and qualitative attributes of risks and issues (impact, probability, and timeframe)
- 2. Qualitative and Quantitative analysis—The project manager will use this analysis throughout the duration of the contract to ensure the team is always focusing on the high-priority risks and issues. The project manager will use techniques of reviewing the risk/issue for probability, impact(s), subject matter input, data gathering (review project team, etc.), and assessment of other parameters. The project manager will communicate these findings to the project team (Cerner and DHHR) to formulate a mitigation plan and decide on the priority of the risk/issue. Prioritizing or ranking risks and issues
- 3. Identifying risk triggers and indicators
- 4. Identifying mitigation or actions
- Identifying root cause

## Risk and Issue Response Planning

Risk and issue response planning identifies appropriate ways to address an overall or individual project risk or issue by identifying a strategy for mitigation. Mitigation strategies will be created with the project manager and the project team (DHHR and Cerner) to handle an issue in the least impactful way to the EDS Project. Mitigation strategies are created during project kickoff, team meetings, or ad hoc meetings depending on criticality of the risk or issue. Mitigation strategies will leverage the data analysis done in the risk and issue analysis step. Review of the risk or issue, qualitative and quantitative results will help lay out the strategy needed per risk or issue. Strategies include evaluation of scope creep or gold plating scope, resource constraint, or capacity issues. Risk/issue response planning determines how to mitigate this for the success of the project.



Mitigation strategies include specific actions to implement the response, including primary and contingency strategies if necessary. Mitigation strategies and responses will be documented in the risk and issue log. As a best practice, Cerner completes a mitigation strategy within ten business days of a risk or issue being raised. If DHHR has timeline specifications that differ from this best practice, Cerner will work with DHHR to meet the specifications. The project manager will monitor and evaluate if the risk/issue response will have an impact (cost, quality, resource, timeline) on the project plan if implemented, will follow the change process as necessary, and will update deliverables where needed.

## Implementing Risk Response

The project manager will be responsible for communicating, implementing, and updating any project deliverables, and executing the approved risk/issue responses. The project manager will ensure the risk/issue response is executed in order to minimize negative impacts on the project.

## Risk Review Board (RRB)

An RRB is created with representation from DHHR decision makers and Cerner project team members. The RRB responsibilities will be to approve risk and issue responses, impacts/implementation strategies, and escalation points. The project manager will provide the following information to the RRB to approve the issue and prioritization:

- Risk/issue description
- Initial prioritization
- Project impact
  - Scope
  - Milestones
  - Deliverables
  - Resources
  - System
  - Cost
- Recommended action/mitigation strategies
- Any supporting documentation

The RRB will meet on a recurring basis (monthly unless otherwise determined by DHHR) and the project manager will supply an agenda 24 hours prior to the meeting per the approved PWP. The project manager prepares and presents a risk and issue status report, including metrics and trending of project risks/issues, review of risk/issue analysis and impacts, as well as any decisions the RRB will need to evaluate and make. Decisions on risks and issues (e.g., if the mitigation strategy is acceptable) will require a unanimous agreement by RRB. The project manager will post meeting minutes within two business days following the RRB meeting.

At any time, a risk or issue may need to be escalated beyond the RRB. This escalation will happen if the RRB cannot reach a unanimous agreement on the mitigation strategy for a risk/issue or if an issue is a showstopper for the project. The project manager will be responsible for the escalation to the executive leadership and will set up a meeting depending on the criticality of the risk/issue. To help executive leadership make the necessary decision, the



project manager will supply all information given to the RRB (listed above) as well as the reason the risk/issue is being escalated.

#### Monitoring Risk and Issue Response

Monitoring risks and issues is a continuous activity. Cerner's project manager is accountable for monitoring risks and issues and providing timely updates to stakeholders. Cerner's project manager will be the point of contact on all risks and issues. It is necessary to track the state of identified risks/issues, ensure stakeholders are notified of response plans, and identify new risks/issues resulting from responses. Monitoring risks/issues ensures accurate, relevant, and timely data is collected, compiled, and analyzed. It also allows the project team to use the analysis to take appropriate action. Monitoring will begin when a risk or issue has been identified and may continue throughout the life cycle of the project or until the risk/issue is resolved. A risk is resolved when its threat has been neutralized or impact is acceptably low to DHHR.

While monitoring risks, indicators, and triggers for a high-impact risk may be observed and mitigation strategies may be executed. If a risk is not mitigated, or if the mitigation fails, there is a chance that the risk will be converted to an issue. The project manager monitors the risks listed in the risk and issue log on a continuous basis and notifies the risk owner if a risk, either known and previously identified or unexpected and non-identified, is converted to an issue.

Risk thresholds, escalation, and notification must be detailed when planning for the risk response in order to ensure timely and proper escalation when monitoring the risk. The specific information related to threshold, escalation, and notification should align with risk impact, risk probability, and risk exposure for each risk domain. Cerner's project manager is the main point of contact for all communication on the escalations of risk and issues and will escalate to executive leadership or the RRB as needed. Cerner's project manager will gather all information to present to the executive leadership or the RRB by collaborating with subject matter experts and analysis of risk or issue. Information that will be gather and discussed includes the following, at a minimum: Reason for escalation, impact, risk mitigation strategy, proposed action and timeline.

# Validate Implementation of Risk or Issue Mitigation Strategy

The project manager will work with the risk/issue owner and DHHR to monitor and verify the implemented risk/issue mitigation strategy has not caused a downstream negative impact to workflow or process(es). A timeframe for this verification step will be determined by DHHR and tracked in the PWP as a milestone. DHHR will approve or reject that the risk/issue mitigation strategy was successful on the milestone date. If approved, the project manager will follow the rest of the risk and issue management process flow. If rejected, the project manager will update the risk and issue with additional mitigation steps or a new timeframe for reviewing and validating the mitigation strategy. The project manager will add a new milestone date to the PWP as necessary and will continue to monitor the outcome of the mitigation strategy.

#### Closure of Risks and Issue

Closure of the risk or issue is the last step in risk and issue management. The closure criteria should be documented in the risk and issue log and agreed upon by the project team (DHHR and Cerner) and/or the RRB. The closure criteria should be specific about how, by implementing



the approved mitigation strategy, the risk or issue would be eliminated or how the likelihood of the risk would become low enough to be acceptable to DHHR. Closure criteria will also specify how the implementation strategy will be validated. The project manager will propose the criteria based on the analysis of the risk/issue and will document the agreed-upon criteria. The risk/issue will be closed out in the risk and issue log on the Project Portal. The project manager will update the risk/issue with confirmation that the closure criteria have been met. The Project Portal will capture the modified date and the closure date. Risk/issue are only closed with prior approval by DHHR. Any risk/issue that is not closed is monitor on a weekly basis and reviewed by the project manager.

#### Communication of Risks with Other Vendors

Cerner will work with DHHR and other vendors to understand how risks and issues may impact other parts of the Medicaid enterprise. The project manager will coordinate and collaborate with other vendors and DHHR Project Management vendor to fully document and impact any risk or issue that has been raised and ensure the risks/issues have been evaluated. The project manager will then communicate with other vendors to ensure that all stakeholders understand the risk/issue and the plan to implement the mitigation strategy.

## 1.4 Quality Management

The Vendor's proposal should describe the Vendor's approach to ensure the quality of the solution and include details on the management of requirements through traceability matrices, configuration management activities, organizational readiness, and deliverables and artifacts. The Vendor's approach should also detail information on the proposed quality metrics as well as the Vendor's approach to managing solution defect and issue tracking.

More specifically, the Vendor's approach to quality management should include, at a minimum, the following elements:

- Management of the solution specifications. This includes the identification of inconsistencies between the specifications, project deliverables, and/or artifacts.
- Management of the RTM that will be used for specifications management. This includes
  detail on how the quality management approach will support and maintain the traceability
  between the specification and the proposed solution.
- Management of configuration management activities, including but not limited to the control and monitoring of the software library.
- Management of practices and procedures that will be followed for reporting, tracking, and resolving problems or issues identified in the solution's development, transition, and maintenance.
- The Vendor's approach to business process changes resulting of requests from DHHR.
- The Vendor's approach to an organizational readiness assessment of DHHR's
  organization. This may include a gap analysis and recommendations for organization
  change required to support the solution's implementation in the DHHR environment. This
  assessment should be approved a minimum of three (3) months prior to the solution's
  deployment.
- The Vendor's approach to the quality of work products developed and delivered by the Vendor and the Vendor's subcontractors, if applicable.
- The Vendor's proposed quality management approach should include detail on how the Vendor plans to deliver signature ready project deliverables. The Vendor should assume the State will complete its review of signature ready deliverables within ten (10) business days.



- The Vendor's approach to how quality metrics and measurements will be identified, collected, and analyzed to ensure that quality goals, including management and DHHR solution goals, are being met. It should also describe the types of project metrics used.
- The Vendor's organizational structure, and the roles and responsibilities of Vendor staff as they relate to quality management.
- The Vendor's description of the processes and approach to manage solution defect and issue tracking solution for tracking and resolution of items and, if applicable, how the quality management approach will support corrective action plans (CAPs) being developed to address more significant issues.

The success of the EDS Project depends upon the implementation of a quality management approach that promotes quality planning on all levels, including our technology, people, and processes. To accomplish this, Cerner applies an integrated approach to quality management that clearly defines standards, measures and continuous improvement of quality. The Quality Management Methodology is an integrated component of our Medicaid Deployment Methodology, and we have successfully employed this methodology in both the Kansas and Montana MMIS projects, as well as other large-scale health IT implementations. The Quality Management Methodology begins on day one of the initiation phase continues throughout the DDI and Operations phases until turnover and closeout of the EDS Project. During the Kickoff and Foundation events, Cerner will work collaboratively with DHHR to determine quality metrics and goals to which the EDS project will adhere. Specific quality activities, standards, functionality, and processes are thereby established early in the project and continue through all project phases. All project team members are responsible to adhere to the project's quality standards; the Quality Assurance Manager is the central point of contact for all quality assurance and control activities. The following table shows quality management activities across the Medicaid Deployment Methodology project phases aligned to the DHHR summary of events, tasks, deliverables, and resources across all phases.

Table 33 Quality Management Across All Project Phases

Task Group	Events and Tasks	Deliverables	Cerner Resources
Initiate/Project Initiation and Planning	<ul> <li>Identify stakeholder alignment</li> <li>Identify DHHR's expectations, quality metrics, and quality measurements</li> <li>Identify SMEs to participate in quality activities</li> <li>Establish quality assurance governance</li> <li>Establish a baseline existing target SLAs and metrics</li> <li>Create, submit, and gain approval of Quality Management Plan</li> </ul>	Quality     Management Plan     Stakeholder     Management Plan     and Stakeholder     Analysis	<ul> <li>Project manager</li> <li>Operations manager</li> <li>PMO Lead</li> <li>Quality assurance manager</li> <li>Documentation management lead</li> </ul>
Plan/Solution Planning	<ul> <li>Update PWP</li> <li>Knowledge transfer of Quality         Management Plan to the project team     </li> </ul>	<ul> <li>Updated PWP (if applicable)</li> <li>Updated Quality Management Plan (if applicable)</li> </ul>	<ul> <li>Project manager</li> <li>Operations manager</li> <li>PMO Lead</li> <li>Quality assurance manager</li> <li>Documentation management lead</li> </ul>



Execute/Solution Design, Testing, Operations and Solution Deployment	Execute Quality Management Plan	<ul> <li>Updated Quality         Management Plan         (if applicable)</li> </ul>	<ul> <li>Project manager</li> <li>Operations manager</li> <li>PMO Lead</li> <li>Quality assurance manager</li> <li>Documentation management lead</li> </ul>
Monitor and Control/Project Monitor and Control	<ul> <li>Monitor PWP</li> <li>Monitor SLAs, quality metrics, and quality measurements</li> <li>Report quality metrics, quality measurements, and any discrepancies</li> <li>Stakeholder satisfaction surveys on quality effectiveness</li> </ul>	<ul> <li>Updated Quality         Management Plan         (if applicable)</li> <li>SLA and         performance         reports</li> </ul>	<ul> <li>Project manager</li> <li>Operations manager</li> <li>PMO Lead</li> <li>Quality assurance manager</li> <li>Documentation management lead</li> </ul>
Close	<ul> <li>Receive sign-off from DHHR on Quality Management Plan</li> <li>Receive sign-off from DHHR on Turnover/Closeout Plan and results</li> </ul>	<ul> <li>Turnover and closeout results report</li> </ul>	<ul> <li>Project manager</li> <li>Operations manager</li> <li>PMO Lead</li> <li>Quality assurance manager</li> <li>Documentation management lead</li> </ul>

Guided by PMBOK® principles, our Quality Management Methodology meets the quality objectives of the West Virginia EDS Project using our integrated quality approach. We designed our Quality Management Methodology to comply with your requirements and meet and/or exceed DHHR quality expectations. Outputs of the Quality Management Methodology, such as performance reports, provide transparency of quality risks and issues that may arise. Our quality-focused project team and corporate resources will work in collaboration with DHHR. We will take a proactive approach with regards to quality improvement throughout the life of the contract. The Quality Assurance Manager will be responsible for implementing, leading and conforming to DHHR approved quality performance improvements in a method and manner designed to meet or exceed ISO® 9001:2008, QMS, TQM, SSAE 18, and Continuous Quality Improvement principles and standards for all West Virginia Medicaid enterprise-wide services.

### **Quality Management Plan**

The Quality Management Plan documents the policies and procedures, roles and responsibilities, and quality metrics necessary to ensure the project meets the defined requirements from project planning to final delivery. Both project management and technical staff integrate and engage with the approach to ensure the success of overall quality management. The Quality Management Plan —which is stored on the Project Portal as a resource for all project team members—supports continuous process improvement activities throughout the life of the contract. Cerner will collaborate with DHHR in the development, review, annual update, and approval of the plan. Our comprehensive Quality Management Plan includes the details necessary to assess the overall quality of the project. The Quality Management Plan provides DHHR with the methodology for quality management throughout the planning, execution, and control of design, development, testing and implementation of the solution. It provides a process for defining quality goals for deliverables, work products, and communication, establishing a plan to achieve those goals, as well as monitoring and adjusting the plan, activities, and quality goals to satisfy the needs of DHHR. As illustrated in the following graphic, the Quality Management Plan establishes the framework for measuring, monitoring, controlling, and reporting the quality standards of the project.



Figure 59 Quality Approach Diagram



The Medicaid Deployment Methodology draws guidance from the PMBOK® to support effective quality management through quality planning, assurance (QA), and control (QC). The Medicaid Deployment Methodology's monitor and control phase incorporates quality management activities, including providing quality metrics for weekly and monthly status reports, conducting discussions of quality assurance and improvements, and managing additional activities requested by

DHHR as quality standards and goals evolve. The following is a sample Quality Management Plan table of contents based upon our baseline approach to quality management. DHHR's specific Quality Management Plan will be tailored to the West Virginia EDS Project with input, as appropriate, from all project stakeholders.

Table 34 Sample Quality Management Plan Table of Contents

	Section	Description
1.	Introduction	Summarizes the contents of the Quality Management Plan specific to the EDS Project requirements and Cerner's integrated quality approach.
2.	Purpose	Defines the purpose of the Quality Management Plan and outlines defined objectives specific to the EDS Project environment.
3.	Roles and Responsibilities	Defines QM staff roles with job descriptions
4.	Quality Management Approach	Describes QM approach for the EDS Project and outlines the key elements of Cerner's QM approach: quality planning, quality assurance, quality control, quality activities and standards, quality metrics and measures, QM tools, and problem reporting and resolution.
5.	Quality Planning	Describes the EDS Project quality planning activities including, establishment of quality standards, identification of quality metrics, and execution of problem remediation activities. Also addresses the required documentation, deliverables, and processes for meeting <state> and Cerner QM standards.</state>
6.	Quality Assurance	Describes iterative QA process to be used throughout the EDS Project life cycle. Establishes all project stakeholder responsibility to take ownership of the identification, assessment, response to, monitoring, and control of project quality. Also defines EDS Project QA standards, including individual processes with their standard objectives and expected inputs.
7.	Quality Control	Describes the process for monitoring quality standards and results, including each step of the QC process from verification, validation, and monitoring of work products to ensure the requirements for quality and scope of work are being fulfilled through monitoring of work outputs and detection of problems/defects and remediation.
8.	Quality Management Tools and Techniques	Describes the tools and techniques Cerner uses to monitor quality throughout the EDS Project contract. It provides a list of techniques as well as required input tools and overview of how each technique is to be applied. This section also lists and describes the tools that are used to monitor quality, including dashboards, Project Portal, and trackers.
9.	Documentation on Quality Activities	Assigns project manager responsibility for maintaining evidence of project documentation deliverables and requirements assessments. It identifies



	document storage methods, including use of a shared document repository and Project Portal. This section provides an overview of performance reporting.
10. Quality Management Problem Resolution	Assigns project manager responsibility in the monitoring of quality and monthly summary reporting to executive leadership. This section outlines the timeframe in which quality issues without a resolution should be escalated to executive leadership, as well as the criteria to trigger escalation.
11. Acronyms and Definitions	Provides full definition of acronyms.
12. Revision History	Lists each version number, author of each revision, description of each revision, as well as revision dates.

## **Quality Planning**

The project Quality Management Methodology involves all stakeholders and team members (Cerner and DHHR) early in the project phases. During the initiation phase, the project manager and Quality Assurance Manager, work with DHHR to identify stakeholders, establish governance, identify expectations in quality metrics, and to create the Quality Management Plan. Cerner understands the importance of quality management and is committed to continually training our staff on processes and practices critical to quality management. Quality planning includes:

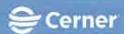
Establish Quality Standards—The quality planning process defines and develops the quality process descriptions, standards, and procedures that are applicable to the project phases. During quality planning, Cerner will document how the project will demonstrate compliance with quality standards. The requirements established by DHHR and Cerner will drive internal development of quality measurements and standards. The Cerner Quality System is based on the standards for Quality Management System Requirements established by the International Organization for Standardization (ISO® 9001:2008). Quality management is audited annually (at minimum) by third-party auditors. Cerner also conducts internal audits to ensure each application group adheres to standards (e.g., 99.0% system availability and uptime and uninterrupted access to data).

**Identify Quality Metrics**—The quality planning process identifies the metrics the team will use. The metrics, which are based on the quality standards established by the project team (Cerner and DHHR), are refined during each phase of the project and documented in regular updates to the Quality Management Plan. The project team uses these quality metrics to evaluate progress as project goals are met.

Remediate Problems—When quality metrics indicate that standards are not being met, Corrective Action Plans (CAPs) are issued and process improvements are carried out wherever possible to improve the success of future project phases. The quality of project activities and deliverables will increase steadily throughout the project life cycle as the project team incorporates quality management recommendations from preceding review stages. This approach facilitates successful implementation and operation phases and minimizes issues during the project.

# **Quality Assurance**

Quality assurance (QA) focuses on project processes. It justifies confidence that quality requirements can be fulfilled and helps to ensure the project resources are effective in delivering



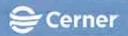
the HealtheIntent applications. The Quality Assurance Manager performs quality assurance assessments, at a frequency agreed to with DHHR, to ensure Cerner meets contractual responsibilities in a timely manner. Quality reviews are built into our internal processes. For example, our standard report development process involves multiple quality assurance checkpoints:

- Written design documents ensure the developer captures design decisions and answers necessary questions.
- Code reviews allow a peer to check the design and identify potential problems.
- Demos provide the larger team an opportunity to provide feedback and suggest improvements.
- **User documentation** ensures the team is looking at the report from an end-user's perspective and can explain the design.
- Final review confirms the report and documentation are consistent and meet standards.
- Internal retrospectives allow the team to gather lessons learned and incorporate them into the process.

The quality assurance process includes measuring key metrics for project processes, analyzing the data gathered, and continuously improving the processes. The table below describes the quality assurance standards for the EDS Project.

Table 35 Quality Assurance Standards

Process	Objective	Quality assurance standards	Inputs include
Project management	Verify that project management activities are performed via a documented process	Weekly status meetings occur and are well attended     Meeting agendas and minutes are distributed in required timelines     Modifications to PWP are approved and tracked     Impact estimations occur outside of/prior to the schedule modification process     Action items are documented and tracked to completion	Schedule Management Plan
Configuration review	Verify that configuration review activities are performed via a documented process	<ul> <li>Configurations that are needed to meet the requirements will be discussed in events held during the initiate and plan phases of the Medicaid Deployment Methodology</li> <li>Configuration documents will be updated after initiation and planning events and will be reviewed and approved by DHHR prior to configuration occurring</li> <li>Requirements validation sessions will determine how Cerner will meet requirements prior to configuration and testing</li> <li>In requirements validation sessions, Cerner will demonstrate what requirements have been met via the scenario name, and DHHR will review the test result report and approve that the requirement has been met per the specifications</li> </ul>	PWP, Configuration Workbooks



		<ul> <li>A process is in place to communicate configuration changes to the development and testing teams, DHHR team members, and any other vendors that could be impacted</li> <li>Configuration review processes are implemented to ensure that the inputs were correctly selected, incorporated, reviewed and approved by DHHR</li> </ul>	
Change management	Verify that change management activities are performed via a documented process	<ul> <li>Requests for changes (including but not limited to changes in business process, scope, resources, schedule) are documented in the Change Request Log on the Project Portal</li> </ul>	Change Management Plan, Change Control Board, Organizational Change Plan, PMP
		<ul> <li>Change management approvals will be documented on Project Portal</li> <li>Organizational change readiness assessment will be completed and approved</li> <li>A process is in place to communicate approved changes to the project team</li> <li>Change requests will be closed after confirmation that the change request has been implemented, validated, and approved by DHHR</li> </ul>	
Risk and issue management	Verify that risk and issue management activities are performed via a documented process	<ul> <li>Risks and issue are appropriately categorized based on risk level, probability, and impact.</li> <li>Risks and issues follow the approved escalation path as needed</li> <li>Risk and issue mitigation plans are reviewed by the DHHR and include steps and timeline to verify completed mitigation</li> </ul>	PMP, Risk and Issue Management Plan
Test management (software validation and verification)	Verify that test management activities are performed via a documented process	<ul> <li>Testing procedures are well-defined</li> <li>Templates will be used to ensure testing artifacts are consistent and complete</li> <li>Test scripts will be reviewed and approved by DHHR</li> <li>Testing tasks are tracked in the testing tool</li> </ul>	Test Standards and Guidelines, Master Test Plan
Defect management	Verify that defect management activities are performed via a documented process	Defect process is well-defined     Defects are tracked and available from the Project Portal	Master Test Plan, Defect Management Plan, Solution Operations Plan
Deliverable management	Verify that deliverable development, review, and approval are performed via a documented process	Deliverable review and acceptance process is well-defined     Deliverable due dates are documented in PWP     Quality Assurance Manager reviews documentation for quality, completeness, and correct content for purpose     Retrospectives are conducted by Cerner PMO to review deliverable quality	PWP, Documentation Management Plan



Requirements management	Verify that requirements management is documented and updated in the RTM as noted in the PMP	Requirements management process is well-defined Requirements are tracked throughout all project phases via the RTM Requirements are tracked to design documentation as applicable to link Requirements are tracked to design documentation as applicable to link Approval of the requirements for all	RTM, RMP, Requirements Gap Analysis, Requirements Specification Document, RV Sessions
		configuration items will be attained and documented in the RTM prior to initiation of the configuration	

# Quality Control

Quality control (QC) focuses on the products and deliverables of the project. It is the process of monitoring project deliverables to verify that they are of acceptable quality and are complete and correct. QC includes the inspection, analysis, and actions required to ensure quality output. The QC process involves the following steps:

- Verifying, validating, and monitoring of work products to ensure the requirements for quality and scope of work are being fulfilled
- Inspecting deliverables and documentation and comparing these items to a standard of quality defined by the stakeholders of the project
- Verifying that requirements are met before content or functionality is approved and implemented
- Monitoring output of workflow progress, detecting problems and defects, and allowing for corrections prior to delivery of work products or services

The table below describes the QC standards for the project.

Table 36 Quality Control Standards

Project	Quality control standards	Inputs include
Project schedule	<ul> <li>All project phases are realistically represented and elaborated prior to the initiation of a new release</li> <li>PWP is approved and baselined</li> <li>All tasks (excluding summary and milestone) have resources assigned and resource allocations do not exceed 100%</li> </ul>	PWP, Schedule Management Plan
Configuration management	Configuration changes are controlled and monitored based on the approved design	Configuration Workbooks, Configuration Standards and Guidelines, Detailed System Design
Change management	<ul> <li>Change requests are properly documented and contain all necessary impact assessments and approvals</li> <li>Change requests, regardless of type, follow the steps outlined in the Change Management Plan</li> <li>Change log is maintained on the Project Portal and reviewed weekly</li> <li>Approved change requests are reflected in the PWP as necessary</li> </ul>	Change Management Plan, CCB Guidelines, Organizational Change Plan, PMP, PWP



	Organizational change readiness assessment is approved at minimum three months prior to the first implementation	
Deliverable reviews	<ul> <li>Deliverables are delivered by date noted in approved PWP</li> <li>Deliverables are submitted in a signature-ready state, via the process outlined in the Documentation Management Plan</li> <li>Deliverables are reviewed within a specified time period by DHHR</li> <li>Deliverables are approved within ten business days</li> </ul>	PWP, Documentation Management Plan
Risk and issue management	<ul> <li>Risks and issues are properly documented, categorized, and analyzed for impact in the tracking tool</li> <li>Mitigation plans for risks and issues are reviewed and approved in governance meetings</li> </ul>	PMP Risk and Issue Management Plan
Requirements management	<ul> <li>Requirements are documented in the RTM tool and traced, as applicable, to the signed contract, design documents, test artifacts, and MECT checklists</li> <li>New requirements introduced from a change request will be traced to original requirements</li> </ul>	Configuration Standards and Guidelines, Master Test Plan MECT, RMP, RTM, Requirements Gap Analysis, Requirements Specification Document
Test planning	<ul> <li>Realistic testing and repair work estimates are incorporated in the PWP</li> <li>Test scripts are reviewed and approved by DHHR before execution of testing for any functional requirement</li> <li>Defects discovered during testing are documented, reviewed, and resolution is planned and approved</li> </ul>	Master Test Plan. RTM

# **Documentation on Quality Activities**

The Quality Assurance Manager maintains evidence of assessments performed on the project documentation deliverables and requirements. Maintaining this documentation provides objective evidence and traceability of assessments performed throughout the project life cycle. Examples of documentation include SLA reports, weekly/monthly status reports, deliverable comment logs, and any CAPs. The project team houses the reporting data and the reports produced through the quality activities and reviews on the Project Portal throughout the project.

# Quality Management Problem Resolution

When QC measurements do not meet the agreed-upon quality levels, the Quality Assurance Manager reports the issue in the scheduled status reports and follows the approved escalation path if conditions warrant. Quality issues that would trigger immediate escalation include but are not limited to issues that could impact release milestones, project scope, cost, or resourcing. The Quality Assurance Manager documents the quality issue or discrepancy, including impact to the project and proposed resolution, in a CAP. A CAP provides the detailed actions needed to achieve a targeted improvement or outcome. CAPs ensure plans to resolve issues are developed, implemented, and monitored throughout the project. DHHR reviews the CAP and will help to define the action steps to resolve the discrepancies, if necessary. Actions may vary depending on the process or the deliverable being inspected or reviewed. The Quality Assurance Manager tracks all CAPs that have been issued in a CAP log (accessible via the Project Portal) to provide DHHR a summary view of any CAPs issued during the project and facilitates meetings with process owners/team leads to review quality issues and resolution



plans. The Quality Assurance Manager also continually monitors quality issues and reports to DHHR until resolution of the quality issue.

# Quality Management Tools and Techniques

## **Performance Monitoring**

The Quality Assurance Manager measures and reports on project quality, raises any risk or issues, and evaluates impacts and mitigations. We leverage multiple performance monitoring tools to track quality. The project team also uses tools that include but are not limited to the following:

- P2Sentinel: An auditing tool for tracking privacy and policy regulations by measuring auditability, policy accountability, and improvements against the policy.
- **HealtheIntent incident reports:** Reports generated on incidents on the HealtheIntent Platform.
- Performance Dashboard: The performance dashboard will be used to monitor progress against SLAs for system and project performance.
- Cerner Status Dashboard: Allows Cerner and DHHR personnel the ability to track real-time
  performance or system status associated to the HealtheIntent Platform. Email alerts and
  notifications are configured to update personnel on incidents or irregularities that could
  impact their environment.
- Test Tracker (via Project Portal): The testing manager and project team members will perform tests for the quality of the work on the configuration and reports. The testing manager will monitor the test results daily and will produce testing result reports for the DHHR. Results of all testing activities may be viewed by project team members (Cerner and DHHR) in the testing tools.
- Project Work Plan: Cerner's project manager will use the approved PWP as a
  measurement that all activities and deliverables are meeting the noted dates. The project
  manager will calculate the schedule performance index and cost performance index as
  indicators of project performance using the best practice of PMBOK®.

These tools are currently deployed in our Montana Medicaid project where we use a Performance Dashboard for on-demand monitoring of performance indicators. This data is used in weekly and monthly status updates, and DHHR resources view performance information directly on the dashboard. Following are images of the dashboard and a sample monthly performance report.



Figure 60 Performance Dashboard and Sample Monthly Performance Report Lights On Network Corner Lights On Network Non-Production 11000305\* 344C-12 Amin Lights On Network 2000 100 Non-Pack Size era Ujita Or Naturali tarke i des Healtheintent Analysis an egit, satistica Elbyton. Substitute of the Residents of Consider 1-2-1 \$80,000 Take Person we end kneeps Response Time 1512865 郷 1,114.307 Matth Server 1,412



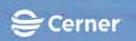


Figure 61 Sample SLA Performance Report The State out inversige a Figuriary to an of Fee at Asian St.A. model for St.A-2011. The Vendor hereby agrees that file (5) to ten (50) percent or Stik 10% of such payment missioner will be or color (Fee at Nack) for St.A. deficiences. The Fee at Filer will be calcituded as follows. St of operation for all desired sections of the operation of the complement with delivery detection payment milestone. Flower Fee at Risk, per payment missioner (Compleme with delivery detection) of the payment missioner (Physical Risk) per payment of all deliverations and the payment missioner (Physical Risk) per payment missioner of the payment missioner of the payment of the p The Deliverative Demnic Level with invariors the perspecting of SOW loads, an infect, fisherapiles and events assigned soverfic completion chains in the applicable SOW and another SOW Project Plan that are subsered on time and approved by the State. The State and the Vandor will appear to Project Plans to the County of the the commencement of the SOW, and the Verdat will resistant the Project Plan as agreed to descriptions the life of the SOW? The parket may agree to the besident the Project Plans throughout the life of the SOW Due to the overlapping resistent. throughout the life of the SOW Due to the prelatinging resizes of the decreasing a paginger interfection will be not able too for measurement. The Vanikor should provide retirmables or discussion by the prelation of the state of beginning with agreed learned of complemented content, quality, and content topic co-creage, and otherwise the agreed purpose of the debrevable between the agreed purpose of the debrevable between the agreed purpose of the debrevable between the agreed purpose of the applicable SOW. The Vendor should capture with the Courtes passing debreving dates at exhibited in the applicable SOW analon. SOW Project Plant. This service level off commence upon SOW situation and red previous and SOW completions. Oskrarabie d Debierables en sks completed by dare on PWF the Work Plan The Pacestania axia Emerator, 10st of payment misstores of corough is Remarking 10st of payment misstores of motivage a Abacteria of the State of the State of the Ventor to payment misstores of motivage is a second of the Ventor to payment misstores where the Abacteria of the Ventor to payment misstores where the Abacteria of the Ventor to payment misstores where the Ventor to payment misstores. The Ventor to payment misstores where the Ventor to payment misstores where the Ventor to payment misstores. The Ventor to payment misstores where the Ventor to payment misstores where the Ventor to payment misstores. Station Accessance Beauty Lead will be the first State has accessed the landing deliver of after Intercent Station on accompanies in the State-accordance organic schedule. The State has seffect in eather or as the bread companies of paging means or production. The control accordance of while one or 20% of message in paging accordance of while the enter of 20% of message implementation schedule. Countries Ð 19 กรียสมภัยย์ สิงกับสุก ( packe devot thustraces the mended approach DHHR SLA 1

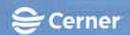
The following table describes the multiple tools and techniques that Cerner uses to help monitor quality throughout the DHHR project. Our project manager will leverage the expertise of relevant team members and stakeholders to review scope and leverage their experience in defining quality standards, needs, and expectations. The project manager will incorporate these techniques into the planning and tasks defined in PWP.

Table 37 Techniques and Tools

Technique	Definition	Input tool(s)
Statistical sampling	Statistical sampling involves choosing part of a population of interest for inspection. The sample is taken to measure controls and verify quality.	<ul><li>Testing tools</li><li>PWP</li><li>Project deliverables</li></ul>
Root cause analysis	Root cause analysis is an analytical technique used to determine the basic underlying reason that causes a variance, defect, or risk.	<ul><li>Risk and issue log</li><li>Change request log</li><li>Incident log</li></ul>
Process analysis	Process analysis identifies opportunities for process improvements	<ul> <li>Data analytics report</li> <li>P2Sentinel</li> <li>Performance dashboard</li> <li>Cerner Status Dashboard</li> <li>Configuration task completion</li> <li>PWP</li> <li>Project deliverables</li> </ul>
Document analysis	The analysis of different documents produced as part of the output of project control processes, such as quality reports, test reports, performance reports, and variance analysis, identify processes that may jeopardize meeting the specified requirements or stakeholders' expectations.	<ul> <li>Project deliverables</li> <li>PWP</li> <li>Test result reports</li> <li>CMS artifacts</li> <li>Audit reports</li> <li>Performance reports</li> </ul>



Benchmarking	Involves comparing actual or planned project practices or the project quality standards to those of comparable projects to identify best practices, generate ideas for improvement, and provide a basis for measuring performance	<ul> <li>Project Portal</li> <li>Performance dashboard</li> <li>Cerner Status Dashboard</li> <li>Previous project lessons learned and documentation</li> </ul>
Interviewing	Project and product quality needs and expectations, implicit and explicit, formal and informal, are identified by interviewing experienced project participants, stakeholders, and subject matter experts.	<ul><li>Subject matter experts</li><li>Project team</li><li>Stakeholders</li></ul>
Performance review	Performance reviews measure, compare, and analyze actual performance of work in progress on the project against the baseline.	Project Portal PWP
Flowchart	Referred to as process maps because they display the sequence of steps and the branching possibilities that exist for a process that transforms one or more inputs into one or more outputs. Flowcharts show the activities, decision points, branching loops, parallel paths, and overall order of processing by mapping the operational details of procedures that exist within a horizontal value chain.	<ul> <li>Project deliverables</li> <li>Internal application development process flow(s)</li> </ul>
Logical data model	Logical data models are a visual representation of an organization's data, described in business language and independent of any specific technology. The logical data model can be used to identify where data integrity or other quality issues can arise.	<ul> <li>Performance dashboard</li> <li>Data Management Plan</li> <li>Audit reports</li> <li>Queries run on database</li> </ul>
Earned value	The measure of work performed expressed in terms of the budget authorized for that work.	<ul> <li>PWP</li> <li>Project baseline</li> <li>Staffing Management Plan</li> <li>Cost Management Plan</li> </ul>
Planned value	The authorized budget assigned to scheduled work.	<ul> <li>PWP</li> <li>Project baseline</li> <li>Staffing Management Plan</li> <li>Cost Management Plan</li> </ul>
Actual cost	The realized cost incurred for the work performed on an activity during a specific time period.	<ul> <li>PWP</li> <li>Project baseline</li> <li>Staffing Management Plan</li> <li>Cost Management Plan</li> </ul>
Cost variance	The amount of budget deficit or surplus at a given point in the project expressed as the difference between the earned values and the actual cost	<ul> <li>PWP</li> <li>Project baseline</li> <li>Staffing Management Plan</li> <li>Cost Management Plan</li> </ul>
Cost performance index	A measure of the cost efficiency of budgeted resources expressed as the ratio of earned value to actual cost.	<ul> <li>PWP</li> <li>Project baseline</li> <li>Staffing Management Plan</li> <li>Cost Management Plan</li> </ul>
Schedule variance	A measure of schedule performance expressed as the difference between the earned value and the planned value.	<ul> <li>PWP</li> <li>Project baseline</li> <li>Staffing Management Plan</li> <li>Cost Management Plan</li> </ul>
Schedule performance ndex	A measure of schedule efficiency expressed as the ratio of earned value to planned value.	<ul> <li>PWP</li> <li>Project baseline</li> <li>Staffing Management Plan</li> <li>Cost Management Plan</li> </ul>



# 1.5 Change Management

The Vendor's proposal should describe the Vendor's approach for change management including, including but not limited to methodologies, tools, and processes required to appropriately manage and document changes to the system (e.g., impact analysis, change requests, etc.).

The Change Management Methodology (CMM) is based on industry best practices and the Project Management Institute's PMI PMBOK®. The table below shows the Medicaid Deployment Methodology project phases aligned to the DHHR task groups and summary of events and tasks, deliverables, and resources across phase.

Table 38 Change Management Across All Project Phases

Task Group	Events and Tasks	Deliverables	Resources
Initiate/Project Initiation and Planning	Identify stakeholder alignment Identify DHHR's expectations Identify SMEs to participate in change management activities Identify agenda for Change Control Board (CCB) Review existing CCB processes, templates, and other materials from DHHR Identify common terminology Review, submit, and gain approval of Change Management Plan	<ul> <li>Initial Change         Management Plan</li> <li>Stakeholder         Management Plan         and Stakeholder         Analysis</li> <li>Weekly project         management and         monthly executive         status reports</li> </ul>	<ul> <li>Executive sponsor</li> <li>Project manager</li> <li>Operations manager</li> <li>PMO lead</li> <li>Documentation management lead</li> </ul>
Plan/Solution Planning	Update PWP with CCB schedule     Knowledge transfer of Change     Management Plan to the project team	<ul> <li>Updated PWP</li> <li>Updated Change Management Plan (if applicable)</li> <li>Weekly project management and monthly executive status reports</li> </ul>	<ul> <li>Project manager</li> <li>Project manager</li> <li>Operations manager</li> <li>PMO lead</li> <li>Documentation management lead</li> </ul>
Execute/Solution Design, Testing, Operations and Solution Deployment	<ul> <li>Execute Change Management Plan</li> <li>Prepare materials and participate in CCB meetings</li> </ul>	<ul> <li>Updated Change Management Plan (if applicable)</li> <li>Weekly project management and monthly executive status reports</li> </ul>	<ul> <li>Project manager</li> <li>Project manager</li> <li>Operations manager</li> <li>PMO lead</li> <li>Documentation management lead</li> </ul>
Monitor and Control/ Project Monitor and Control	<ul> <li>Monitor PWP</li> <li>Monitor SLAs and change management logs</li> <li>Monitor risk, issues, and impacts on change requests</li> <li>Stakeholder satisfaction surveys on change management effectiveness</li> </ul>	<ul> <li>Updated PWP (if applicable)</li> <li>Updated Change Management Plan (if applicable)</li> <li>Weekly project management and monthly executive status reports</li> </ul>	<ul> <li>Project manager</li> <li>Project manager</li> <li>Operations manager</li> <li>PMO lead</li> <li>Documentation management lead</li> </ul>



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- Receive sign-off from DHHR on Change Management Plan
- Receive sign-off from DHHR on Turnover/Closeout Plan and results
- Turnover and close out results report
- Weekly project management and monthly executive status reports
- Project manager
- Project manager
- Operations manager
- PMO lead
- Documentation management lead

Cerner understands changes may be based on functional or technical scope, resources, or schedule. Our CMM and processes are structured to be adaptable to handle changes of varied complexity, impact, and severity. Due to the flexibility of our methodology, Cerner can integrate with the existing DHHR approved Change Management Plan and Change Management Board materials. The methodology addresses the use of impact assessment, to fully define, and understand the impact of a requested change across the project.

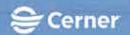
Over time, Cerner has refined our methodology to ensure we have implemented our standards, tools, and techniques successfully. Our project team is equipped to accommodate project changes necessary for integration across DHHR's Medicaid enterprise. For example, in Stage 2 of our state of Kansas project, we follow the change management process to plan and gain approval for the onboarding of new data. This data, onboarded as part of module modernization, includes over 600 files across six modules. Cerner will collaborate with DHHR, DHHR-approved suppliers, and subcontractors throughout the project. We will work to identify system or non-system-based changes, maintenance, or modification efforts, which will result in a streamlined, organized, and/or efficient effect on systems or operations.

# Change Management Plan

Cerner will document the change management processes and procedures in a formal Change Management Plan that will coordinate with DHHR's project management vendor and the established plan, processes, templates, and materials. The Change Management Plan will establish the necessary roles and responsibilities, policies, guidelines, and processes for controlling and managing changes during the life of the project. Cerner will provide the deliverable to the DHHR for review, comment, and approval. The Change Management Plan conforms to PMBOK® standards and addresses the challenges represented within a multi-supplier environment. Cerner has significant experience working with multiple vendors through MMIS and large-scale health IT deployments. We have integrated with clients change policies and procedures, participated in and facilitated the CCB depending on the request, and implemented the approved change requests. We will work alongside other vendors when the changes span multiple modules and will ensure communication is clear and concise. As part of the CMM, Cerner will update deliverables as needed to fully document our portion of the changes for both external stakeholders and Cerner project team members.

Upon approval of the Change Management Plan, Cerner will inform project stakeholders on the change management processes and what constitutes the change. This helps to mitigate project risks such as overruns in cost and schedule due to unapproved changes in project scope. The Change Management Plan:

- Establishes a repeatable, structured approach to effectively manage, track, and prioritize changes to the project (involving scope, defects, deliverables, timeline, etc.)
- Defines who will use the change management process during the project life cycle and establish roles and responsibilities



- Provides for repository (the Change Request Log on the Project Portal) for change requests and supporting documentation to preserve a historical view, accessible throughout the life of the project
- Provides a structure for and understanding of the impact of a change, including associated risks
- Provides a mechanism by which changes are reviewed, evaluated, approved, rejected, or deferred by the CCB
- Ensures technical and management accountability is in place for each change
- Ensures approved changes are implemented on a timely schedule and at reasonable and expected cost, producing a product that functions to DHHR specifications

### **Change Control Board**

During the Kickoff event, the project manager will work with DHHR's project management vendor to review the governance and expectations of their Change Control Board (CCB), and we will adhere to these expectations. Cerner understands that the CCB may include of applicable representatives from all module Suppliers to discuss and plan appropriate changes. As the scope and complexity of the West Virginia EDS increases, the importance of the CCB to monitor all changes across the Enterprise will grow. The Board reviews Change Requests to determine approval. During the process, the CCB:

- Evaluates each change request against the business need
- Evaluates the change request in conjunction with SLA considerations
- Collaborates with the appropriate stakeholder subject matter experts who support activities needed to complete the change
- Escalates the change request to the appropriate executive leadership when the CCB is unable to reach a unanimous decision from members attending the meeting

For each CCB meeting, Cerner actively participates with DHHR and other Module suppliers to evaluate Change Requests, assign and schedule work, and discuss change requests. At initiation, Cerner and DHHR will solidify the meeting times and frequency, which will be in alignment with the DHHR enterprise change management schedule. The project manager works with the appropriate internal and external staff to analyze each Change Request and provide the estimates for change and document findings in the Project Portal. The project manager will attend each meeting and serve as the point person for collecting change requests, coordinating CCB meetings (if needed), managing communication, and implementing of decisions made by the CCB. In order to ensure that change requests move forward in a timely manner, meetings may take place in person or virtually. The project manager will supply the following information in the CCB meeting to help evaluate and make a unanimous decision on the request.

- The date of the Change Request and the party submitting it
- The description of and reason for the proposed change
- The estimated impact of the change to the project (proposed timelines, cost, scope, resources, etc.)
- Date the change will need to be implemented

The project manager will distribute meeting agendas to CCB members at least 24 hours before the start of a scheduled meeting or a meeting requested with at least 48 hours' notice. Meeting



minutes will be posted to the Project Portal within two business days following the meeting. Interested parties may choose to attend the CCB meeting in order to represent their interests.

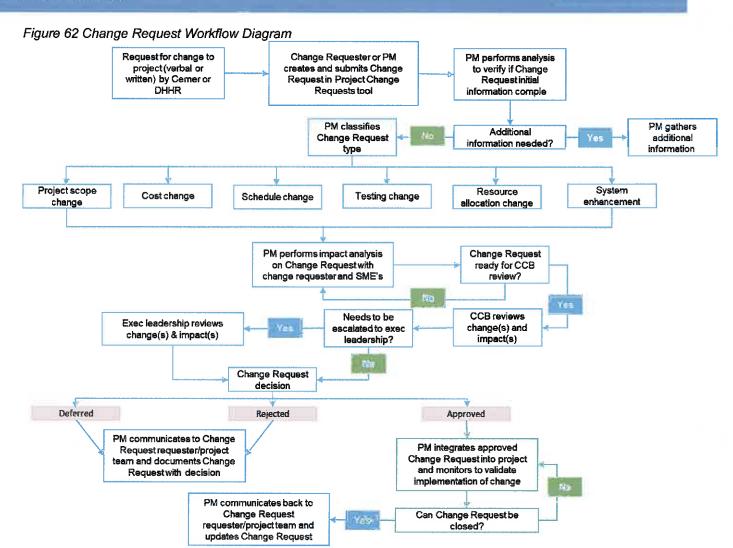
# **Change Management Process**

When changes occur within the West Virginia EDS Project, Cerner will work collaboratively with DHHR and other project stakeholders in deploying our CMM, which includes a formal change control process. As shown in the following graphic, our change control process addresses receiving, initiating, and executing data, reporting, and analytics work requests. Cerner will meet with DHHR subject matter experts to gain an in-depth understanding of the needed changes and to document detailed requirements, design specifications, and business rules.

Once the request is fully documented and impact has been assessed, Cerner will develop a proposal to implement the Change Request and associated deliverables and provide proposed dates for DHHR review and approval. At times, circumstances may prevent us from suppling proposed dates. For instance, CMS provides a new regulation for a report. Cerner will need to work with CMS and DHHR on how to implement, do analysis on existing report and impacts, estimate work effort, and then review of the PWP for time for implementation. Cerner will keep the status and comments fields in the Change Request Log on the Project Portal up to date. This will aid any authorized DHHR user to view the status of the change request. The project manager will provide updates on changes in the weekly and monthly status reports, so DHHR stakeholders are provided with the latest information.

The change management process will be conducted throughout the life cycle of the contract. The project manager is responsible for training all members of the project team (DHHR and Cerner) on the process that will be followed throughout the project. The following process flow illustrates the process for changes that are specific to our part within the Project. The PM and other members of our project team will participate as necessary in the enterprise change management process for Change Requests that impact multiple modules or vendors participating in the Project.





# **Change Requests**

All project team members have the responsibility of identifying changes. Change Requests can originate from many sources, but the reasons for changes to the EDS Project will fall primarily within the following categories:

- Change in federal requirements
- Change in state regulatory requirement
- Change in state policy
- Operational policy and/or procedure changes
- Release date modification
- Scope increase
- Documentation updates
- Request to move functionality to another release



Requests for enhancements, configuration, research, and maintenance to the production environment will follow the change management process.

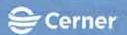
Authorized personnel from DHHR, the project manager, or a member of project team can create a Change Request via the Change Request Log on the Project Portal. The summary view of all changes provides a history of changes for the duration of the project. The requester and other stakeholders will collaborate on a Change Request and view updates, as this is the source of truth for all Change Requests. The project manager reviews the Change Request for thoroughness, assesses the type of change, identifies parties that potentially could be impacted, and reviews the Change Request against requirements of the project. Cerner evaluates all new Change Requests for scope, resources, impact, and priority.

After this estimate, assessment, and review, Cerner updates the status of the request in the change management tool to reflect that it is ready for CCB review and decision. The CCB then reviews the Change Request and the documentation gathered during the assessment. The CCB has the authority to approve, reject, postpone, and prioritize changes. CCB will evaluate the Change Request for conflicts with other requests, opportunities for "bundling" requests (combining two or more requests into a single targeted release), criticality, and scheduling. The project manager monitors SLAs for all changes and will include SLAs in the impact for CCB review. After the CCB decision is given, the project manager updates the status of the Change Request in the change management tool and communicates with the project team via approved communication mechanism. Upon a CCB decision to proceed with the change, the project manager will begin tracking the process in the Change Request Log. The project manager will also evaluate what project deliverables need to be updated and integrate the approved Change Request into the project.

Cerner will work with DHHR and other vendors to understand how any changes may impact other parts of the EDS Project. The PM will coordinate and collaborate with other vendors to fully document and impact any Change Requests and ensure the Change Requests have been evaluated and approved by DHHR. The PM will then communicate with other vendors to ensure that all stakeholders understand the Change Requests and the plan for implementation for all approved changes. Change Requests will be documented via the Project Portal and be distributed via meeting minutes to the stakeholders, change requester, and project team members.

### Impact Analysis

All proposed changes will go through Impact Analysis. Once a Change Request has been submitted, the PM evaluates the type of change. The PM and/or the project team identifies parties who may be impacted by the change and circulates the change proposal to them. These parties are responsible for estimating the effects of implementing the proposed change. All proposed changes will go through Impact Analysis. Once a Change Request has been submitted, the project manager evaluates the type of change. The project manager and/or the project team identifies parties who may be impacted by the change and circulates the change proposal to them. These parties are responsible for estimating the effects of implementing the proposed change. Cerner may need to meet with DHHR and/or other vendors to further document the change. Cerner associates gather information and documentation on the change. Cerner applications support and technical personnel perform a detailed assessment of the resources (people, systems, time, cost, risk) involved and the impact. A preliminary design of the application is documented on the Change Request and shared with the DHHR and/or the



other vendors, as appropriate. After Impact Analysis, the Change Request should account for the following impacts:

- Size and level of effort (LOE) of the change
- Resources
- Schedule changes
- Cost increases/decreases
- Code/configuration changes
- Documentation (training materials, on-line help, etc.)
- Training needs

The project manager will consolidate the impacts and place the change proposal on the agenda for evaluation by the CCB. After implementation of a Change Request, the project manager will work with DHHR to monitor and verify the change has not caused a downstream negative impact to workflow or process(es). A timeframe for this verification step will be determine by DHHR and is tracked in the PWP as a milestone. DHHR will approve or reject that the change request implementation and validation was successful on the milestone date. The project team and the PMO works collaboratively with DHHR and the project management vendor to ensure the required processes and deliverables are executed in the most efficient and effective manner possible. Cerner will provide knowledge transfer via meetings (in person or via web conference) and adequate staff during all phases of the project and will continuously train members of the project team by education of the change request process. We will also provide the necessary training on the Project Portal regarding where and how to find the latest on the CCB meeting notes and agendas.

### 1.6 Organizational Change Management

The Vendor's proposal should describe the Vendor's methodology, tools, and techniques for communicating and accomplishing organizational change management for DHHR. Discuss how the Vendor can assist DHHR in communicating, training, and implementing organizational change to DHHR.

The Vendor's proposed methodology should at a minimum address the following areas:

- The Vendor's organizational change Management methodology
- Determination of the impact of this change
- Methods of responding to the change, process harmonization, and approach towards potential resistance
- Method for ensuring a successful change management program
- Lessons Learned regarding change management challenges as they will impact this project

Cerner has an organizational change management model that is specifically tailored to healthcare. Our CLEAR change model is based on extensive social science research and Cerner's 40 years in the healthcare industry. This research has shown that the top factors that lead to successful change in an organization include top management sponsorship, a corporate culture that supports change, honest and timely communication and employee involvement. While a software implementation relies on coordination of logistics, schedules and people's expertise in technology, the strategy required to gain employee adoption and utilization of that system must take into account human emotion, psychology and group dynamics.



Cerner's CLEAR model gives organizations an organized way to think about how to lead employees through change, based on five core strategies: Communication, Leadership, Engagement, Alignment and Responsibility. These strategies, along with their supporting best practices (see attached model below) will be used to assess DHHR's culture and readiness for change. Moreover, an organizational change consultant would diagnose each office, program, and the associated new work/workflows. The consultant will identify any barriers associated with the new work and then map the barriers back to the strategies and best practices in the CLEAR model. The result is a behaviorally specific organizational change plan.

The five key strategies are supported by twenty best practices that are tailored for healthcare. The CLEAR Change Model is non-linear and best practices are applied based on assessment and re-assessment of your needs and effectiveness of actions. Because the CLEAR Change Model is built from proven social science and models, it may be used on its own or in addition to other models and strategies DHHR requests. A detailed list of the strategies is listed below:

**Communication**—Relevant, transparent and consistent communications, combined with empathetic listening, help people be receptive to change. These strategies help everyone understand the why behind the change, what the change entails, and how people will be impacted by and contribute to the change.

**Leadership**—Leaders prepare the organization for successful change by defining vision, establishing governance, and committing resources. Effective leaders also demonstrate and communicate to their organization why change is necessary. They visibly serve as role models in living out the behaviors that ensure the organization's vision is realized.

**Engagement**—Key stakeholder groups play an active role in guiding others through the change. They identify and prepare influencing audiences with action plans to purposely engage all people who are impacted by the change. Involving people in the change increases their commitment to change.

**Alignment**—The business functions of the organization should support the overall vision of the change effort. Aligning the organization's tools, resources, and processes structurally enables individuals to adopt the desired change.

**Responsibility**—Key interpersonal skills contribute to the development of an adaptable culture supportive of ongoing change. The organization must foster an environment where individuals feel comfortable and responsible to demonstrate these actions that lead to a change-ready culture.

The team assess current state and then defines future state workflows. Once future state workflows are mapped, potential barriers and behavioral nudges are identified to help the individual transition to the new workflow and demonstrate the requisite behaviors associated with the new work. Because our model and approach are behavior based, we are able to measure if change is occurring. If not, strategies and tactics are modified to ensure new behaviors associated to the new work and workflows are occurring. Additionally, stakeholders play a crucial part in the success or failure of any change effort. Their support drive success by securing resources access to expertise and motivating their teams. Therefore, the assessment and management of stakeholders is a key consideration of any change effort. Cerner uses the CLEAR model best practice of "Assess and manage stakeholders", as show in the following graphic, and will document the results of the assessment in the Stakeholder Management Plan and Stakeholder Analysis. Using this best practice, the organizational change consultant assesses stakeholders to determine where the individual stakeholder falls within the spectrum of support. They then move forward to manage each assessed stakeholder to implement a series of tactics to move the stakeholder closer to the positive support end of the spectrum. This



is a cyclical process of assess and execute tactics (manage), repeated during the project until the stakeholder has arrived at the desired level of commitment.

Communication Leadership Engagement Alignment Responsibility

# 1.7 Training Approach

The Vendor's proposal should present a narrative description of the Vendor's proposed approach to completion of the training throughout the contract, including the Vendor's proposed:

1 model. 5 strategies. 20 best practices.

- Approach to the completion of the training deliverables (as listed in Appendix 2:
   Deliverables and Milestones Dictionary), including methodology for updating deliverables throughout the lifecycle of the project.
- Approach to development, maintenance, and implementation of the Training Management Plan, including methodologies addressing:
  - Assessment of internal and external training needs, including gap analysis
  - Approach to user training, supporting all business processes as identified in the RFP
  - Delivery of end-user training throughout the solution's implementation
  - Development and use of online tutorials, online help, online policy and procedure manuals, and hard copy user manuals for the delivery of training
  - Development and use of live, web seminar, and video-based training
  - The target audiences for training, including State staff, Vendor staff, clients, providers, and third-party stakeholders who work in the system
  - Plan to provide and/or leverage existing State training facilities to perform enduser training detailed in this section.
  - Tools that the Vendor will use to support training
  - The planned curriculum for each system user role and audience
  - o Initial training schedule
  - Version control and maintenance of training documentation

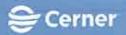


- Training evaluation, including the use of evaluation survey tools to determine whether the trainings produced the expected results
- Initial and ongoing training outcomes tracking and reporting, including information such as, but not limited to, the number of training sessions, type of training, training locations, number of trainees, and information regarding the actual training results and recommendations for follow-up training
- Approach to "train-the-trainer" activities during the Operations phase.
- Approach to role-based training during both implementation, and maintenance and operations
- Approach to development of training materials
- Approach to training evaluations

Cerner's primary goal in delivering our solution is to ensure that DHHR's users have the necessary training to achieve its full value. To accomplish this, we tailor training to DHHR's specific needs, leveraging our best practices and actively engaging each user in the process. We employ several models, including the train-the-trainer model, ensuring that trainees learn to use the application effectively and are confident in their ability to pass their knowledge to others. Cerner provides DHHR's users with learning opportunities targeted to defined participant categories (e.g., novice, casual user, power user/clinician, and contract monitor). Cerner works with DHHR to determine the anticipated user types and develop materials accordingly. A welldesigned and well-executed end-user training methodology is essential to the overall success of the West Virginia EDS project. Cerner acknowledges that DHHR expects a training methodology that provides both standard training schedules/classes coupled with specialized training to address individual user need. Our training approach is flexible to address trainee requirements (e.g., level of education, adaptive needs, user access type, and level of experience). Cerner's training team works with DHHR personnel to understand current and future training needs to choose the best possible delivery method. Most importantly, the approach and materials are designed based on the user workflows identified during previous project events and aim to train users how to do their job with new technology and processes. The following table demonstrates the Medicaid Deployment Methodology project phases aligned to DHHR's timeline. A high-level summary of events and tasks, deliverables, and resources across all phases is described below.

Table 39 Training Management Across All Project Phases

Task Group	Events and Tasks	Deliverables	Resources
Initiate/ Project Initiation and Planning	Identify stakeholder alignment     Identify DHHR's expectations     Identify SMEs to participate in training activities	PWP     Stakeholder Management Plan and Stakeholder Analysis	<ul> <li>Project manager</li> <li>Operations manager</li> <li>PMO lead</li> <li>Training lead</li> <li>Documentation management lead</li> </ul>
Plan/ Solution Planning	<ul> <li>Identify users to be trained</li> <li>Plan training scope and needs</li> <li>Plan training events and agendas</li> <li>Plan training materials</li> </ul>	Updated PWP	<ul><li> Project manager</li><li> Operations manager</li><li> PMO lead</li><li> Training lead</li></ul>



Task Group	Events and Tasks	Deliverables	Resources
	Update PWP		Documentation     management lead
Execute/ Solution Design, Testing, Operations and Solution Deployment	<ul> <li>Review, submit, and gain approval of Training Management Plan</li> <li>Execute Training Management Plan</li> <li>Conduct training events</li> </ul>	<ul> <li>Updated PWP (if applicable)</li> <li>Training Management Plan</li> <li>Training materials</li> <li>Weekly project management and monthly executive status reports</li> </ul>	<ul> <li>Project manager</li> <li>Operations manager</li> <li>PMO lead</li> <li>Training lead and team</li> <li>Documentation management lead</li> </ul>
Monitor and Control/ Project Monitor and Control	<ul> <li>Monitor PWP</li> <li>Monitor SLAs, training metrics, training assessments, and survey analysis</li> <li>Stakeholder satisfaction surveys on training effectiveness</li> </ul>	<ul> <li>Updated PWP (if applicable)</li> <li>Updated Training Management Plan (if applicable)</li> <li>Training assessments</li> <li>Training summary reports</li> <li>Weekly project management and monthly executive status reports</li> </ul>	<ul> <li>Project manager</li> <li>Operations manager</li> <li>PMO lead</li> <li>Training lead and team</li> <li>Documentation Management lead</li> <li>Quality assurance manager</li> </ul>
Close	<ul> <li>Receive sign-off from DHHR on Training Management Plan</li> <li>Receive sign-off on training results report</li> <li>Receive sign-off from DHHR on Turnover/Closeout plan and results</li> </ul>	<ul> <li>Turnover and close out results report</li> <li>Weekly project management and monthly executive status reports</li> </ul>	<ul> <li>Project manager</li> <li>PMO lead</li> <li>Training lead</li> <li>Documentation management lead</li> </ul>

Our training program is designed to support DHHR designated users to more effectively execute their day-to-day tasks. Primarily, the training sessions cover four core applications of the HealtheIntent Platform solution:

Table 40 Tasks by Application

Application	Tasks
HealtheEDW	Create ad-hoc reports through both SAP BusinessObjects and Tableau
HealtheAnalytics	<ul> <li>Perform data analytics</li> <li>Access pre-configured reports, write queries, create ad-hoc reports/visualizations, and create data sets/data marts/data models</li> </ul>
HealtheRegistries	<ul> <li>Identify potential gaps in care</li> <li>Enhance quality of care by identify opportunities to improve members' health and well being</li> </ul>
HealtheDataLab	<ul> <li>Leverage powerful advanced statistical analysis tool to support research, data science, and clinical intelligence initiatives</li> <li>Initiate and incorporate HealtheDataLab into user workflows</li> <li>Use HealtheDataLab in conjunction with HealtheAnalytics.</li> </ul>

Our adaptable approach to training fosters a more effective learning environment. Cerner is committed to providing DHHR's users with the activities, pace, and support that best address each participant's preferred learning style. Throughout the project, our trainers incorporate feedback to ensure that training is accomplishing our shared objectives. It is our goal to develop a well-versed user community that understands and takes full advantage of the advanced capabilities of the application. Our proven training methods facilitate the most efficient possible mastery of the application, freeing users to focus on DHHR's goal of effective and impactful population health management.



# **Training Management Plan**

Cerner's training team provides DHHR with a Training Management Plan that:

- Establishes key training needs,
- Explains roles and responsibilities, and
- Describes training approaches, including train-the-trainer, end-user training, vendor training, and others as needed.
- Outlines training schedules, agendas, and planned trainee groups,
- Outlines proposed training materials and maintenance,
- Outlines proposed training tools,
- Outlines our preferred methods for documenting metrics and evaluating the success of training.

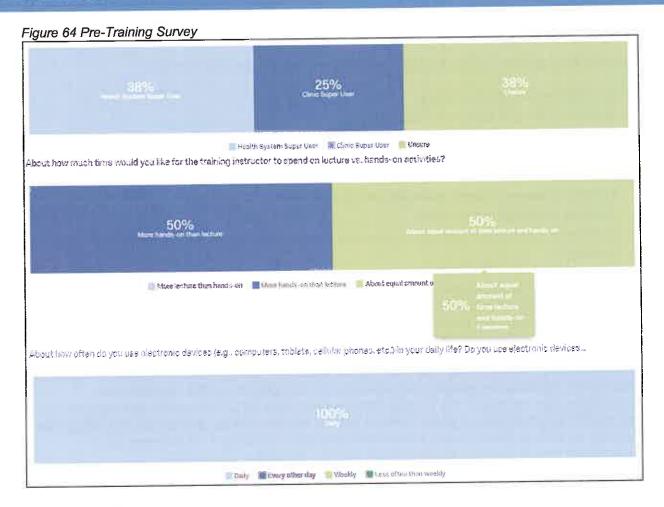
After the Kickoff and Foundation events, Cerner will create a Training Management Plan to ensure we meet DHHR's needs and expectations. We leverage Cerner's existing courses and materials, customizing our training program to meet DHHR's specific needs for in-depth, targeted training and educational support by evaluating current as well as future training needs, defining user types and roles; developing materials for specific user groups; and determining the best training delivery methods. The Training Management Plan details the activities designed to train DHHR efficiently, accurately, and effectively in the operation of the HealtheIntent applications. We will submit the Training Management Plan for DHHR review and approval and will use the approved plan to govern overall training activities, effort, and scope. We will update the plan, as well as related training materials, throughout the project, as triggered by assessment results, process improvements, or new application functionality.

# Training Needs Analysis

To effectively gauge the individual needs of the trainees attending each session, Cerner and DHHR will collaborate to identify training opportunities as needed, update the Training Management Plan and training materials, and complete the Training Management Plan review and approval process. Cerner will also conduct training needs assessments with individual users to ensure that the development and maintenance of the Training Management Plan addresses the needs of all DHHR stakeholders and provides recommended training course lists to support each identified role.

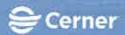
We ask trainees to complete a pre-training survey that includes questions regarding current knowledge of applications offered, preferred learning styles (hands on, visual, demonstration, written direction, etc.), and any special accommodations needed to assist with the trainees' ability to learn (large print manuals, adaptive devices for the hearing impaired, etc.). This pre-training survey facilitates the evaluation of enterprise-wide processes to determine additional training needs and enables the training team to perform analysis of user interactions to determine needs for training, education, and outreach to all users as identified by DHHR. The following is a snapshot of results from a pre-training survey we conducted for Montana.





# Training Staff

Our training team works closely with each client to develop a comprehensive HealtheIntent training program. We coordinate all training efforts with DHHR and its approved contractors, emphasizing the many capabilities of HealtheIntent to improve the health of the designated populations. Cerner's training team consists of experienced trainers with solution and data analytics expertise who provide users with the highest level of training and support (in person and online). Each trainer is responsible for delivering specialized training sessions. To ensure effective, personalized training, we recommend a ratio of one trainer for eight trainees to support learning objectives and provide a quality training experience. This ratio ensures that each trainee receives one-on-one time with the instructor and/or subject matter experts (SMEs) as needed to become proficient with the HealtheIntent Platform applications.



# **Training Delivery Methods**

A well-designed and well-executed training program is essential to the overall success of HealtheIntent. From the start of the contract, we will manage all aspects of user training to ensure successful implementation and ongoing usage. Cerner's technical training program takes a hybrid approach to provide a deep understanding of application technology and tools through face-to-face, web-based, and on-demand training. Varied training approaches are used to establish a learning environment that provides the activities, pace, and support that best address each participant's learning style. Training is typically conducted in on-site sessions, combining formal instruction with guided hands-on engagement. We also integrate web-based demos and tutorials, in-application help, and visual and written documentation. The training team will tailor training based on user needs such as providing non-

# Core Components of the training program:

- Training Management Plan
- Onsite, offsite, and web-based training locations
- Schedule management
- Development and maintenance of all training material
- Delivery of material to end users and proficiency testing
- Quality control reviews
- Re-training, as necessary

technical users with more training on navigation and reports, and focusing technical user training on data sets, queries, etc.

Training will emphasize the many functionalities of the applications as well as how the applications will assist DHHR in managing and improving the health of the Medicaid population. In addition to the on-site scheduled trainings and recorded web-based trainings, Cerner's training team coordinates additional training sessions as deemed necessary and appropriate. These additional training sessions are coordinated as additional on-site, virtual, or web-based training events. The additional trainings follow the previously completed training agendas or are tailored for specific training needs as requested by the specific user type. These added trainings can be conducted in an individual or group setting, as the request warrants.

We typically provide train-the-trainer and general-user training through onsite training sessions during the Implementation Phase, combining formal instruction with guided hands-on engagement. We recommend a standard three-day training for most users, with additional focused trainings for users working more in depth with the application. Alternatively, should executive users or staff from other module vendors require a high-level explanation of the application, condensed one-day courses may be provided. The foundation of Cerner's classroom-based training model is a lecture-style presentation with interactive activities throughout the course. Following initial group instruction, Cerner's training team employs hands-on learning opportunities, including:

- Data scavenger hunts: Users are challenged to test their newfound skills. Using all available tools, trainees attempt to obtain answers to a variety of typical questions.
- Directed problem-solving: Trainees gain application expertise by addressing real-world scenarios.
- Working sessions: Users will further hone their skills by while responding to role-specific groups of questions.

Periodic trivia questions allow trainers to assess comprehension throughout the training process, as well as through the post-training survey evaluation. In addition, training lessons have hands-on activities completed individually with assistance of the training team as needed.



These breaks ensure improved focus and measure comprehension throughout the training process. They also allow the users to gain practical experience working with the tools in a safe and structured environment.

**Training Schedule**—The Training Management Plan outlines the timing and development of training meetings, agenda, and materials. The training events will be scheduled in the PWP. Cerner is prepared to adapt the training schedule as required to ensure maximal participation and, with DHHR's approval, will update the PWP as needed.

**Training Sites, Facilities, and Equipment**—For the classroom-based training, the training team works closely with DHHR to determine the number of staff to be trained. The training team also works with DHHR to determine training location. The training site, equipment needed, and how the equipment will be deployed are documented in the Training Management Plan.

**Training Tools**—Trainees will access Cerner's online learning tool (uLearn) to review and register for classes and web based trainings prior to the event. Users can search and register for required courses, preview teaching format, and refine their search by course date and instruction type.

# **Training Materials**

The Training Management Plan documents the methods and procedures for creating training materials throughout the life cycle of the EDS project. Cerner provides hard copies of all training materials, as well as electronic copies on the Project Portal, as requested and required for each training session. We make accommodations to ensure that our training materials meet ADA standards. Our training team develops DHHR specific training materials, including training manuals, PowerPoint presentations, and recorded trainings. The training team maintains these materials as needed throughout the life of the project. Updates will ensure training materials remain relevant to DHHR and DHHR designated users. Each training manual will provide a table of contents, overview, graphics and slides, interactive lessons and step-by-step application navigation instructions.

**End-User Training Material Access**—Cerner develops training materials in formats designed specifically for Instructor-Led Training format and/or Web- Based Training modules. Cerner will submit training materials to DHHR for approval per the PWP. Upon approval, electronic copies of training materials will be available on the Project Portal.

**Training Material Updates**—Through the life of the project, Cerner reviews and updates the DHHR-specific training materials on a regular schedule, as well as on an as-needed basis as the program and application requirements evolve. We use an agile, ongoing, iterative process in partnership with DHHR staff to accomplish this, and we review and update DHHR-specific training materials prior to relevant program and application changes.

**Additional Resources**—In addition to the wide variety of learning opportunities available in inperson and web-based training sessions, we also embed education resources directly into the HealtheIntent Platform applications. Analytics dashboards created using Tableau include MITA-inspired context-sensitive online tooltips that are easily accessible to users as part of their standard workflow.

We also provide simplified job aides and application reference pages. Job aides are straightforward, one-page handouts that include basic workflows and application functionalities.



Application reference pages reinforce training provided by the application training team. These are updated on a quarterly basis at minimum to maintain an up-to-date reference for all clients.

# Reviewing a Person's Longitudinal Record

# Clinicians and Ancillary Staff

Accessing a Person's Longitudinal Record Depending on your organization and solution configuration, you can access a person's longitudinal record in the following ways:

- In the HealtheRecord application
- By clicking the Clinical Information subtab in HealtheRegistries
- in your organization's Cemer Millennium or non-Cemer Millennium electronic health record (EHR)

### Viewing the Clinical Overview

The clinical overview is divided into separate sections for each of the types of clinical information for a person, including conditions, medications, results, vital signs, immunizations, procedures, documents, visits, and allergies. These sections correspond to other clinical information pages that provide additional details.



### Viewing Demographic Information

The person's name, age, gender, and date of birth (DOB) are displayed on the demographics bar near the top of the page. To display additional information, open the demographics bar by clicking the patient's name.



### Viewing Clinical Information

You can view a clinical information page by clicking the section's label or selecting a type of information from the Displaying list. Select Overview from the Displaying list to return to the clinical overview at any time.

Each clinical information page allows you to view the clinical information in context. You can click the individual

groups or cells on a page to view additional details.

For example, you can expand (by clicking it) a vaccine product group on the Vaccinations page to view a fist of its discrete immunizations, responsible provider, and the administered date and time.



Or you can click a cell on the Results page to view additional details, such as the source, source type, and status, which are displayed in a pop-up box.



The user icon watermark above indicates patient-reported results or vital signs.

## Viewing Medication Dispenses

Click View Dispenses on the footbar on the Medications page or in the Medications section of the Overview page to view the Medication Dispenses timeline.

# Viewing Graphs and Tables of Results or Vital Signs

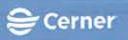
From the Results or Vital Signs pages, click Graph mixt to the name of the result or vital sign to which you wish to view a graph. Note: The graphs are limited to only the minimum and maximum values per day.



While viewing a graph, click the table button to view a table

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#### HealtheAnalytics and HealtheEDW Reference Pages Très paga is a part of a [], Book Greated by Mostra Ben, last monified by German Balt on Nov. 18, 1013 Content identified with the person icon 🍰 is restricted to Cerner associate view only Understand EDW Tools Seatth HealtheEDW Help Fages Understand Reporting Tools HealtheAnatytics Help Pages Understand Data Unload Tools Release Notes Understand Data Syndication HealtheEDW Release Notes Understand Security About HealtheEDIN Reference Pages Understand Cemer Central Healtheintent Glo Data Syndication Reference Pages Understand HealtheEDW Auditing HealtheAnalytics Content Reference Pages Understand EDW Validation Model Experience Understand Healtheintent Support Resources (ii) be determined Roadmaps HealtheAnalytics & HealtheEDW Roadmap Understand the Arabitus Advisory Team Use Case Detich Other Resources Validation Dashboards (eximing scott Data Dictionary For information about standard Headnesday into reports, see the Data Syndication API HealtheAnalytics Reference Pages. Nitt applicable Understand HealtheIntent Core Information Model

## **Training Environment**

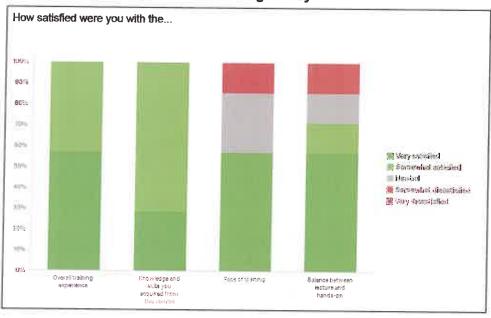
Cerner provides an environment for all training activities. DHHR will designate users who require access to the environment, which mirrors and supports production security roles and access. Each user can access all functions within the application according to their user role. Updated data is accessible within this environment based on the mutually agreed upon refresh schedule, detailed in the PWP. DHHR users will complete most training within the training environment, allowing for hands-on work in the application without the risk of PHI exposure.

# Training Feedback/Assessment/Evaluation

To gauge the effectiveness of the training, a post-training survey and evaluation will be completed by each trainee. The information gathered in these surveys is used by the Cerner training team to develop additional training content, schedule follow-up education, and evaluate the overall knowledge level of the trainees after the training sessions. Cerner will provide all training metrics, feedback, and recommend updates and changes to DHHR. The following graphic demonstrates the results for one question in a post-training survey:



# Sample Results of Montana Post Training Survey



### **Electronic Proficiency Tests**

Cerner also provides post-course proficiency testing through the uLearn portal so that trainees can check their own comprehension at the end of the course. This guide provides an additional means for trainers to understand the users' knowledge retention. It is another tool for trainer to assess knowledge gaps and incorporate the needed information into future trainings. Cerner corrects any deficiencies in training material or delivery identified through training evaluations or through trainee's failure to meet performance objectives.

Cerner's training program is designed to ensure understanding of all HealtheIntent applications and help trainees to become proficient in using these tools for maximum benefit.

TN001

The Vendor should provide a sandbox training environment for authorized solution users within the solution that uses de-identified data and is compliant with the Health Insurance Portability and Accountability Act (HIPAA), Department, and other State and federal regulations.

Cerner will provide a training environment for all training activities. We will work with DHHR to ensure we understand all regulations that the environment must adhere to and what data cannot be exposed.

TN002

The Vendor should develop and maintain a sandbox environment for training that mirrors production.

Cerner will also provide a dedicated environment to support training activities. Typically, this environment is updated with content before promotion to production to allow for hands on training. Users are free to create mock content as part of training without impacting production. Cerner will work in good faith with DHHR to determine a schedule to refresh the training environment from the production domain.



TN003

The solution's training environment should have the capacity to support all components of the solution.

Each trainee will be able to access all functions within the applications according to their user role. Training will emphasize the many functionalities of the HealtheRegistries and HealtheAnalytics applications as well as how the applications will assist DHHR users in managing and improving the health of their Medicaid population.

TN004

The Vendor should ensure that no aspect of training uses protected health information (PH), personally identifiable information (PII), or federal tax information (FTI), and that the training materials and environments are compliant with the Health Insurance Portability and Accountability Act (HIPAA), Department, and other State and federal regulations.

Cerner will provide a sandbox training environment for all training activities. We will work with DHHR to address regulations that support FFP and HIPPA regulations that the environment must adhere to and what data cannot be exposed.

TN005

The Vendor should provide the necessary training and ongoing support to all Department authorized solution users participating in data conversion validation and user acceptance testing (UAT) of the solution components, reporting options, and data structure.

Cerner understands that familiarity with the solution allows DHHR and designated users to perform their UAT and data conversion validation tasks easily and efficiently. While comprehensive user training occurs after UAT, we provide training on essential functionality as part of UAT. Cerner will work with DHHR determine the level of training and support that will best meet the needs of testers.

TN006

The Vendor should provide initial and ongoing training and associated reference documentation to authorized solution users for the duration of the contract, at the request of the Department.

Cerner will provide various training approaches to meet evolving training needs. Initial training is typically conducted in on-site sessions, combining formal instruction with guided hands-on engagement. As DHHR's trainers become proficient, Cerner supports them during training, providing shadowing and making application experts available to answer questions. Throughout the maintenance and operations phase, Cerner provides formal training in both individual and small group settings in addition to more informal coaching to address specific issues and challenges users encounter in their everyday job functions. We also integrate web-based demos and tutorials, in-application help, and visual and written documentation. The archive of training and support materials is actively maintained through the life of the project.

TN007

Throughout the duration of the contract, the Vendor should provide regular training sessions for authorized solution users on updated or new functionality and/or business processes related to the solution, at the request of the Department.

Cerner is committed to provide training sessions to authorized application users at the request of the Department. After analyzing any upcoming changes to functionality or process, we will collaborate with DHHR to determine the appropriate training types, materials, and venues. Cerner will provide support collateral to assist with training on the new release or application changes.

**TN008** 

The Vendor should track and provide confirmation of attendance at all training sessions and report on which versions of training materials were presented at the training.



Cerner will capture a list of training attendees, including DHHR Staff (identified by division and bureau) and other vendor staff, for all sessions. Attendance records, as well as materials for each training session, will be stored on the Project Portal.

TN009

The Vendor should provide evaluation feedback forms to training participants at the end of each training and provide summaries of these evaluations to the Department.

To gauge the effectiveness of the training, Cerner will ask each trainee to complete a post-training survey and evaluation. Cerner's training team uses the information gathered in these surveys to develop additional training content, schedule follow-up education, and evaluate the overall knowledge level of the trainees. After each training session, Cerner will provide all training metrics and feedback, and we will recommend updates and changes to DHHR for review and approval.

TN010 The Vendor should provide hands-on, in-person, remote, and/or online training.

Our training strategy and approach combines a variety of training methods and activities (face-to-face instruction, web-based demos, tutorials, in-application help and support documentation), allowing users to select the content and delivery method that best meets their needs. We typically provide the initial train-the-trainer and general-user training through on-site training sessions, supported by recorded online trainings and reference materials the trainees can revisit on their own schedules.

TN011

The Vendor should provide Department-approved, commercially-available training and/or guide books addressing all components of the solution and provide to the Department at least four (4) copies of each book for distribution as well as online electronic copies.

Cerner will submit all training materials to DHHR for approval before the start of the training. Upon approval, an electronic copy of the training materials will be available on the Project Portal. Our standard practice is to provide a hard copy of all classroom training materials to each participant in a training session.

TN012

The Vendor should ensure that all Department-approved training documentation for the solution is posted where authorized solution users can access it on demand.

All Department-approved training documentation will be provided in electronic form, posted on the Project Portal. Any DHHR or DHHR-designated user who has Project Portal access will be able to view this material on demand.

TN013

The Vendor should propose a role-based training approach.

Within the train-the-trainer sessions, Cerner discusses the various end-user and administrative roles and reviews the workflows that correlate to each. We work with DHHR to determine which roles should be covered in subsequent trainings. If needed, training sessions may be divided into segments that focus on specific roles. We also provide maintenance training to administrative users, covering day-to-day operations tasks, such as managing changes to user access.

TN014

The Vendor should develop training materials that support each training.

Cerner provides training materials for each scheduled training event, including activity-based training manuals. Following training, we post a recording of the training for users' reference. In addition to instruction and coaching, Cerner offers a wealth of user documentation and self-



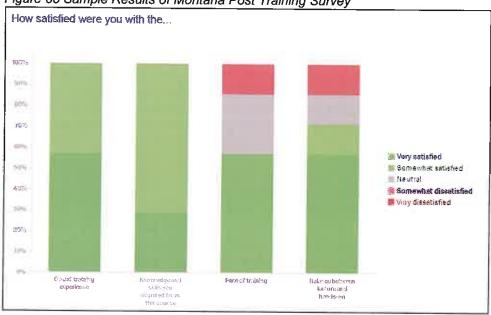
directed learning materials that are readily accessible to the end user via the Project Portal or the uLearn tool.

TN015

The Vendor should conduct training evaluations that provide feedback on the effectiveness of each training.

Cerner sends an evaluation survey to participants after each training and summarizes the results into easy-to-read visualizations. This survey includes several questions with text-based responses for additional feedback. All surveys are reviewed internally, and feedback is shared with DHHR. The following graphic demonstrates the results of one question in a post-training survey:

Figure 65 Sample Results of Montana Post Training Survey



TN016

The Vendor should provide as-is necessary the training facilities and equipment to best ensure the training's success.

Cerner will provide the facility and equipment needs designed to ensure training success and solution adoption.

TN017 The Vendor should provide user acceptance testing (UAT) training.

Cerner will conduct targeted training sessions at the beginning of each UAT event. During these targeted training sessions, we will guide testers through the execution of test scripts and ensure they are confident and prepared for UAT.

TN018 The Vendor should provide train-the-trainer training sessions.

Cerner's best practice is to use of the first training events as a train-the-trainer session, with the goal of creating a super-user community to provide training and support on the application and workflows to additional users. Cerner is committed to conduct train-the-trainer events as needed to keep the super-users current on all functionality and processes.



TN019

The Vendor should support all aspects of training that the Department and Vendor agree are key towards the trainings delivery.

Cerner understands training is key to the success of the project and will work in good faith to support all aspects of training to achieve that success. After the Kickoff and Foundation events, Cerner will document training needs and expectations in the Training Management Plan for DHHR's review and approval.

TN020

The solution's training environments should be reflective of real-world data.

DHHR's training environment for the EDS project will contain de-identified data and will be refreshed from the production domain based on the schedule documented in the approved PWP. The training environment allows users to experience training with real-world data in a safe, predictable environment

TN021

The solution's training environments should include end-to-end training on processes during applicable phases of the project.

The training environment for the EDS project will allow each user to access functionality within the application according to their user role.

### 2. IMPLEMENTATION METHODOLOGY

The Vendor should respond to the headings below and describe the overall approach for the following areas of system development life cycle (SDLC) and support. Please include in the response what the Vendor believes will be an effective process for each component and flow between each of the following areas:

### 2.1 Requirements Analysis and Solution Design Methodology

The Vendor's proposal should describe the Vendor's approach to requirements analysis and the design of the solution. This should include in the response a description of what the Vendor believes will be an effective System Architecture and Design methodology.

During the solution's design, the Vendor should conduct requirements analysis, during which they review, refine, and seek approval for all preliminary requirements included in this RFP, and add requirements where gaps are identified through a detailed analysis exercise. The result should be a final set of detailed requirements to be used for building the EDS. These requirements should be the basis for the Vendor to create usage scenarios and detailed business process workflows.

During the solution's design, the Vendor should develop detailed specifications that demonstrate that the solution meets the IT needs to support business processes. The system requirements and logical description of the entities, relationships, and attributes of the data that were documented during the requirements analysis should be further refined and allocated into system and database design specifications that are organized for implementation within the constraints of a physical environment.

The Vendor and DHHR should conduct a formal review of the high-level architectural design prior to detailed design of the automated system/application to achieve confidence that the design satisfies the system requirements and is in conformance with the enterprise architecture and prescribed design standards.



The solution design and its multiple components should be developed in conjunction with the Project Work Plan as follows:

- The first component should be a Preliminary System Design, which outlines the overall functions that will be developed, their interactions, components, and highlevel architecture.
- The second component should be a DSD, which will give the planned implementation details of the design for each component, interactions, and place in the overall technical architecture.
- The third component should be the Final System Design, which will give the actual implementation details of each component and sub-component from a functional and technical perspective, including the final architecture implementation.

The Vendor's proposal should also describe its approach to conducting requirements validation sessions and Joint Application Development (JAD) sessions. The Vendor's proposal should also include the number and topics of the sessions to be held in support of both requirements validation sessions and JAD sessions.

The Vendor's proposed approach to requirements analysis and solution design should also include detail on the following:

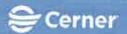
- Process for identifying and resolving gaps between the Vendor's and DHHR's understanding of an RFP specification.
- How the solution's design will include collaborative design with functional and technical subject matter experts.
- . How the Vendor intends to obtain DHHR approval on RFP specifications
- Description of how the proposed solution will fulfill MITA requirements.
- Design documentation for all those project deliverables delivered during the Solution Planning and Solution Design, Testing, and Operations task groups.

The Vendor should propose an approach describing how the EDS design will integrate with other EDS components and DHHR enterprise. The Vendor should also propose how design decisions will be coordinated across all functional areas and modules.

Discovery, requirements validation, and analysis occur in the planning phase of the Medicaid Deployment Methodology using the discovery (i.e., Foundation and Data Integration) events from the initiation phase. At this stage, Cerner works with DHHR and other EDS Project stakeholders to review the scope of work for each Implementation phase. This includes all potential data sources to identify the final scope of all data elements. We also identify gaps or changes and incorporate any changes into the final approach and plan, followed by a review of this process.

### Discovery

Discovery ensures that the HealtheIntent Platform and solutions meet DHHR requirements to replace the legacy DW/DSS. Cerner performs discovery activities prior to gathering of requirements to identify gaps from the RFP and better define the scope of requirements. Initiation includes a Foundation event to align Cerner's and the Department's strategy and allow for review of Cerner's preliminary plan for discovery. The discovery sessions include



decomposing the RFP requirements, and the addenda from Q&A. During the Data Integration event, we focus on the current list of data sources and the legacy reports. This will provide us with the starting point for discussion. At this point, we focus on data ingestion, data priority, data mapping, specification, and begin the process of reviewing files.

# Requirements Validation

Cerner begins with SaaS solutions that are commercially available (complete with fully pre-built templates) and in use at hundreds of client sites. Unit and system testing are performed by the solution team during development. Our solutions represent the best-of-breed offering we supply to public, private, and government health care marketplaces under applicable license arrangements. All software releases are made available to licensed and supported clients and align with our SaaS business model. Should your needs exceed our standard configurations and reports, we will adjust the solutions as necessary to meet the unique needs of DHHR. Following initiation, the planning phase includes the Design Premier and Requirements Validation events. We review and prioritize all potential data sources to identify the final scope of data elements for the design. We will collaborate with DHHR to 1) finalize design decisions, 2) deliver the Detailed System Design document, and 3) ensure adequate time is allocated for discovery activities. As events progress, we allow time and space for discussion with your team to account for inevitable changes as we fine-tune the project design.

Cerner's solutions will consist of primarily out of the box content to meet the needs of DHHR. However, we understand that not all data dictionaries, data marts, and report specifications will be on hand. Just as we have with our existing clients, our project tearn will work closely with DHHR stakeholders and consult with you to best meet your needs. Requirements validation occurs in the planning phase of the Medicaid Deployment Methodology and is critical to the success of the remaining SDLC activities completed for Implementation Phases I and II. To prevent the inclusion of incomplete and/or inaccurate configuration and development, our requirements must be actionable, measurable, testable, and traceable. Requirements validation ensures that our experts and project stakeholders have sufficient detail to align to DHHR's business needs and opportunities.

# **Analysis**

Our team has considerable experience in requirements management for state HealtheEDW and HealtheAnalytics applications. Building upon lessons learned over the past several years, our requirement management process provides a foundation for effective collaboration between Cerner and DHHR. Our requirement management process supports the analysis of both functional and non-functional (technical/operational) requirements to support critical operational, functional, and technical design activities.

The requirements management process begins with gathering requirements. This phase consists of extracting and compiling requirements contained in the RFP, contract, and any other relevant documentation, such as a Statement of Work. Requirements analysis follows activities gathers, and based upon these phases, we will submit a work proposal for DHHR's approval. The graphic below represents the high-level requirements management process flow:

Figure 66 High-Level Requirements

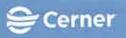
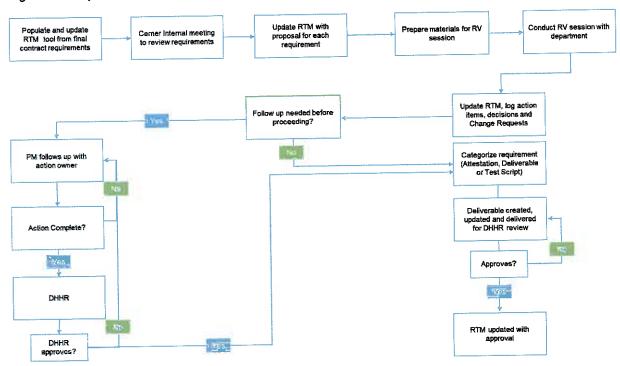


Figure 67 Requirements Management Process



Requirements validation sessions with DHHR will ensure that our team fully understands each requirement. Following approval by DHHR, Cerner will collaborate with the Department to identify and document any missing requirements. The goal of these sessions is for DHHR and Cerner to discover, understand, and clearly articulate all project requirements. Cerner uses the Requirements Traceability Matrix (RTM) to list all requirements, describe how requirements are met, and provide holistic traceability of the requirement. These steps are taken to test script, attestation, deliverable and alignment to MITA advancement and MECT requirements (as applicable). DHHR will review and approve the RTM following finalization.

# MITA Aligned

Cerner will ensure that West Virginia's EDS is MITA-aligned. Our Platform and services methodology align to meets your Business, Infrastructure, and Technology Architecture goals. Using data to drive significant and sustained improvements by starting early in requirements analysis and solution design process. Our flexible approach to system development includes open interfaces and exposed application programming interfaces (APIs) with the separation of business rules from core programming. The use of open interfaces and exposed APIs ensures data extraction and export needed to interface with other entities, including CMS. HealtheIntent solutions align to MITA and the Seven Conditions and Standards. Our HealtheIntent Platform meets the necessary requirements and has been designed, developed, and continuously refined with new innovations. Please refer to Section 5. CMS Certification later in this attachment for more details regarding our Medicaid Deployment Methodology and its application during certification activities.

Our HealtheIntent Platform aligns to the Seven Conditions and Standards (7CS) as follows:



- 1. Modularity—The nature of this procurement aligns with CMS modularity standards and assures DHHR has not invested in outdated technology. Cerner has established its commitment to modernization and supports the need to use data to drive significant and sustained improvements in MITA maturity. Our flexible approach to system development includes open interfaces and exposed application programming interfaces (APIs) with the separation of business rules from core programming. The use of open interfaces and exposed APIs ensures data extraction and export needed to interface with other entities, including CMS.
- MITA Condition—Cerner conducted a MITA assessment of our solution's components to gauge alignment with the MITA 3.0 framework and MECT requirements. We took this proactive step in 2016 to ensure out-of-the-box solution functionality would meet state requirements. We have used these results to roadmap still higher levels of MITA maturity.
- 3. Industry Standards—The HealtheIntent Platform maximizes industry standards for efficacy of collaboration and information sharing. We are members and leaders of professional societies and standards committees including HL7, FHIR, HIPPA, PSTG, and a leader in health care IT we help to shape the future of our field.
- 4. Leverage—The HealtheIntent Platform was initially created for the commercial health care market and has been enhanced and leveraged to support Medicaid payers and state enterprises. As a SaaS, cloud-hosted platform, HealtheIntent is a natively leveraged solution that is reused and configured for each client project.
- Business Results—The HealtheIntent Platform supports the DHHR requirements for maximum automation, user support, and alignment to business outcomes with Service Level Agreements (SLA). Cerner will assist DHHR in achieving business results by providing HealtheIntent to turn data into knowledge.
- 6. Reporting—HealtheEDW is a comprehensive solution and includes summarized data, identifies trends, predicts future behavior, and uses industry standards for maximum interoperability. Our solution supports program management, financial management, policy and budget formulation, clinical outcomes, case management, and coordination of care activities. Traditional reports as well as cutting edge interactive visualizations are provided as part of our existing content catalog.
- Interoperability—The use of open interfaces and exposed APIs ensures data extraction and export needed to interface with other entities, including CMS.

### **Design Documentation**

In the execution phase, Cerner employs a "top-down" design and "bottom-up" configure and test approach to support its processes. Before commencement of work in the design phase, we will develop and submit a Business Design Document (BDD) for approval by the Department. The BDD follows industry project management and business analyst standards and sufficiently addresses the challenges represented within a multi-supplier, integrated system solution. Additionally, the BDD applies to custom development within our SaaS solutions.



Cerner will collaborate with DHHR to provide a Detailed System Design document template for the overall HealtheIntent Implementation and Operations Project. The Detailed System Design follows industry project management and business analyst standards and include detailed data mapping and data flow documentation diagrams for all core and integrated systems/subsystems, as well as sufficiently address the challenges represented within an integrated systems solution. We will document the solution design in three progressively detailed iterations of the Detailed System Design document. During the initiation phase, Cerner's project manager will document milestone dates for each iteration in the Project Work Plan (PWP). If updates to the Detailed System Design are needed throughout the project life cycle, additional milestones will be added to the PWP.

The Detailed System Design describes how the solution will be configured by specifying the components to be used and their relative organization. The Detailed System Design defines functional requirements recorded in the RTM and their transformation into design specifications for system configuration. Cerner understands and agrees that we will have the responsibility to update the Detailed System Design throughout the life of the contract to incorporate all changes to the overall system design. The most current Detailed System Design and previous versions will be stored on the designated West Virginia EDS Project Portal site accessible by DHHR and authorized partners.

The Preliminary System Design identifies how components are integrated into the EDS and what configuration/development is needed to meet the requirements. During the planning phase of the Medicaid Deployment Methodology, Cerner will facilitate the Design Premier event to achieve the following objectives:

- Achieve common understanding of the solution
- Review project overview (key dates, scope, roles)
- Review detailed design decisions needed to localize the solution
- Assign members to follow up on outstanding issues needing clarification before next event
- Discuss the change control process

The Preliminary System Design is an output of this event and we will conduct a thorough walkthrough with DHHR for review and approval.

Cerner will update the Detailed System Design as needed to ensure that it documents and articulates the components and functionality implemented. The document will be finalized during this phase and provide the Final System Design for the EDS Project functionality. We will conduct a walkthrough with DHHR to review and approve. Furthermore, we will provide DHHR with similar documents we have used in other state EDW and data analytics projects to review as a template. We believe it is essential to maintain current and up-to-date documentation of all system components through the life of the project. We will collaborate with DHHR to determine the proper level of detail for each system component including user interface, ELT/ETL, Data Integration, Data Marts, Data Models, Data Extraction, Auditing, Data Mining, De-Identification of data, Data Analysis and Reporting, architecture, web services, and infrastructure.

### 2.2 Solution Development Methodology

During the Development Phase, the Vendor's system development team should take the detailed logical information documented in the System Design Phase and transform it



into an executable form to ensure that all individual components of the automated system/application function correctly and interface properly with other components.

The Vendor's proposal should describe the Vendor's System Development methodology. Include in the response a description of what the Vendor believes will be an effective system development methodology (e.g., Waterfall, Rapid Application Development) for both the Vendor and for DHHR during the implementation of the proposed solution.

The Vendor's proposal should present a narrative description of the Vendor's proposed approach to solution development, including the Vendor's proposed:

- Software/hardware solution, including a description of the solution's ability to accommodate the current and future business and technical needs of DHHR's Medicaid Enterprise. The solution should also describe the methodology and approach for the following:
  - Regular system maintenance, performance optimization, resource capacity utilization, capacity planning, and capacity expansion
  - Compatibility of all hardware, software, or communications components installed for use by DHHR staff with the most current WVOT-supported versions.
- Methodology and approach for implementing and maintaining solution documentation, including data structures, Entity Relationship Diagrams (ERDs), user manuals, BRE, and all other documentation related to the EDS platform, operating system, and programming language
- Methodology and approach to preparing, maintaining, and distributing user documentation for each business process, including a description of how it is to be used as the basis for User Acceptance Testing (UAT) and training, as well as the use of final versions for training before the start of operations
- Methodology and approach to programming and unit testing on all system functions to ensure that a single component can function correctly on a standalone basis
- Methodology and approach to ensure that the developed solution meets design criteria
- Methodology and approach to ensure installation and enhancement or modification of the components of the proposed solution meets the specifications developed and approved by DHHR.

Cerner ensures all Platform software and configured content is validated through our SDLC process. As an off-the-shelf SaaS offering, all Platform software has been centrally tested to ensure passivity before being released. Centralized testing includes unit test, SIT, and UAT. This approach allows us to stand up multiple environments, complete with all hardware, ETL engine, ETL templates, visualization software, prebuilt data models templates, and pre-built reports templates. Once the core Platform is deployed, all content is configured in the configuration environment and then promoted through UAT and then production. As defined in the SDLC process, required testing includes unit, SIT and UAT. The process also requires



Department approval before content is promoted. Automated processes facilitate the movement of content between environments.

Cerner will perform all infrastructure upgrades, including costs and procurement of sub-licensed software, hardware, storage, and internal networking. We will retain ongoing responsibility of all components and will continue to meet infrastructure requirements throughout the life of the contract. The solution is designed to accommodate large, rapidly expanding volumes of data providing fast query performance for data warehouses and other query intensive applications. From a capacity utilization and planning perspective, our design methodology and platform maintenance practices allow for rapid scalability to accommodate for future expansion in maintaining reports, queries, and database storage of data sources. We continually improve the HealtheIntent Platform to ensure reliability of its tools and applications. Redundant system configuration allows for code releases to be implemented without resulting in downtime. Scheduled maintenance for routine updates is performed monthly during off-peak business hours to reduce potential end-user impact. Upgrades and system changes are installed in a rolling timeframe to allow uninterrupted system performance. The Platform will be supported by Cerner and we will maintain compatibility with our partner hardware and software suppliers through the life of the contract.

Once the core Platform is deployed, all content will be configured, promoted through UAT, and finally moved into production. As defined in the SDLC process, required testing includes unit, SIT, and UAT. The process to promote configuration changes requires Department approval before content is promoted. Automated processes facilitate the movement of content between environments. Cerner is committed to continuous improvement of business and technical functionality. During the operations phase of the project, we have continuous responsibilities for managing the entire project life cycle, using the Medicaid Deployment Methodology. Planning and schedule maintenance, change management, quality and performance management, risk and issue management, and updates to deliverable documentation are ongoing activities that span all project phases. Training is managed and monitored per DHHR requirements.

Design, development, testing/implementation, and defect management activities will be planned and scheduled for DHHR-approved requests during operations. Cerner's commitment to West Virginia is to provide the highest level of effective support throughout the life of the contract.

### 2.3 Data Conversion Strategy, Approach, and Timeline

The Vendor's proposal should describe what the Vendor believes to be an effective data conversion strategy and approach for supporting migration of data from the current solution (Section 4.3: Background and Current Operating Environment) to the proposed solution (Section 4.4: Overview of Expected Medicaid EDS and Supporting Services). The Vendor's proposal should also describe how the Vendor will ensure data integrity and consistency through all phases of the project.

Cerner's management of data transfer and conversion supports certification activities, which could include artifact creation and walkthroughs. Each EDS target ingestion file component will include detailed user stories created from mapping documents, test routines, and test data to capture business and correct transformations. The data transformations are incorporated into automated build, test, and regression routines using a deployment management software that carry the builds through the environments of configuration, test, and to production, confirming accuracy prior to promotion to each subsequent environment.



Feature	Benefits to DHHR
Data Conversion Plan	Cerner's data plan includes a current state analysis, testing, load, reconciliation, and cleanup of data for each modification requiring the load of historical data. As information is processed by Cerner's HealtheEDW solution, it undergoes a series of transformation processes whereby it is mapped, standardized, normalized, and reconciled at person-level into the unified, structured data set.
Testing	Cerner's approach and commitment to testing phases will include system testing process, integration testing, data conversion testing process, and approach to supporting DHHR during UAT. We offer two standard environments with our solution: Testing and Production The testing environment can be created for various levels of testing and data validation outside of the production environment.
Integration/APIs	Cerner's solution captures data from internal and external sources, such as public health of behavioral health data, and makes it available for incorporation into analytics, reporting, forecasting, and mapping where appropriate. The Platform consumes the required data, processes and normalizes said data, then releases it for wider application.
ETL	As DHHR data is processed by Cerner's population health management platform, it undergoes a series of transformative processes whereby it is mapped, standardized, normalized, and reconciled at a person-level into the unified, structured data set. These transformation processes are executed by both supervised and unsupervised machine-learning algorithms which represent years of Cerner research and development. Cerner's population health analytics solution provides ad-hoc analytics and custom reporting on data that is loaded.

Cerner is proposing three releases with MMIS, PEIA, and HSC data sources being converted in the first release. The data conversion strategy is to build upon this foundation. Additional sources will be agreed upon with Cerner and DHHR to support business needs for subsequent releases. For each data source, an ICD specifies the interface requirements the participating systems must meet. It describes the concept of operations for the interface, defines the message structure and protocols that govern the interchange of data, and identifies the communication paths along which the project team expects data to flow. For each interface, the ICD provides the following information:

- A description of the data exchange format and protocol for exchange
- A general description of the interface
- Assumptions where appropriate
- Estimated size and frequency of data exchange

The proposed solution includes our data quality monitoring services which consist of both automated and manual capabilities to ensure the ETL data acquisition process is performed efficiently and reliably. The system performs checks against incoming data sets to ensure that the data being sent from source systems is as expected. This includes macro-level checks and field-level validations (e.g., expected data type). We also support the ability for more advanced checks against data set trends. For example, the system identifies whether a data set that historically includes both male and female values is sent with only male values.

The system populates a status dashboard of incoming data sources that is monitored by the Cerner team. Should an issue with a source be found, the Cerner team will take steps to correct the issue and, if necessary, log the issue and alert the appropriate parties for further resolution. Any issues are tracked in our online issue tracking system (eService) from initial event log through resolution. For more information regarding our data quality monitoring services, please



refer to the Data Quality section in Attachment G: Business Specifications Approach in the technical proposal.

### 3. DEPLOYMENT METHODOLOGY

Describe the Vendor's overall approach regarding the following areas of SDLC and support. Please include in the response what the Vendor believes will be an effective process for each component and flow between each of the following areas:

- Implementation/Rollout Planning
- Implementation Methodology and Timeline
- Issues, Challenges, and Risks
- Lessons Learned

In the execution phase and before commencement of work in the design phase, Cerner develops and submits a BDD for approval by the Department. The BDD follows industry project management and business analyst standards and sufficiently addresses the challenges represented within a multi-supplier, integrated system solution. The BDD will apply to content configured during each release. Cerner will collaborate with DHHR to provide a Detailed System Design document template for the project's implementation and operations. The Detailed System Design will follow industry project management and business analyst standards, including detailed data mapping and data flow diagrams for all core and integrated systems/subsystems.

Our staffing and DDI operations are aligned to deliver required functionality within aggressive timeframes. The HealtheIntent Platform allows DHHR to leverage standard out-of-the-box content derived from our experience both in state Medicaid and private health care organizations. Additionally, DHHR can independently create content using our analytics tools, ensuring that your experts have their desired reporting capabilities readily available following implementation. As part of our implementation strategy, Cerner and DHHR will conduct regular strategy sessions to recommend best practices based on our experience and work with you to refine our approach based on your feedback. In the event DHHR identifies solution user requests that cannot be fulfilled through DHHR independently defined content, Cerner will work with you to address those requests through our best practice recommendations and to complete any new functionality created as a result of a solution user request within a mutually agreed upon timeframe.

As described in Project Management (PM), our preferred methodology is to perform incremental releases that provide progressive value to DHHR. This approach aligns to the speed to value requested by DHHR for this project. As an example, Kansas enjoyed rapid speed to value, having the system up day one of implementation with access to the capabilities of the solution. For details pertaining to how we will accomplish this for DHHR, please refer to Section 1. Project Management Methodology in this attachment for more details on the Medicaid Deployment Methodology and our Project Management Methodology. Cerner's deployment methodology aligns with key elements that contribute to implementation success:

- Solutions focused on value
- Collaboration with stakeholders
- Proven PMO Methodologies
- Alignment with CMS



#### Access to Data

#### Solutions focused on value

An Agile approach—We deliver incrementally with an agile approach to adjust accordingly including what the need is to the end result, look at iteratively, produce value to the client, and release more often, instead of big bang. This ensures requirements are met and tested more thoroughly in a systematic fashion which allows value to be achieved faster.

Structure of team around strategy, data, and PMO support is foundationally built to provide flexibility. For example, for the state of Montana we initially planned four scheduled releases. During this time, a business need called for content to be deployed that was not previously scheduled on the Work Plan. The Cerner team worked with the state to identify the requirements, align the right teams, and created a release between two previously scheduled releases. This release allowed us to bring Montana the value they needed. Our agile implementation and deployment methodology provided the necessary flexibility with the original release plan to meet their needs.

### Collaboration with Stakeholders

Health outcome expertise—Our internal stakeholders bring strong PM and PMO, strategy, clinical expertise, data science, and a large client base across multiple industries with experience solving a variety of healthcare problems. When choosing Cerner, our customers know that we are consulting with several internal teams to leverage networks or contacts within Cerner. This provides the benefit of a truly collaborative partnership. Additionally, Cerner is Client-centric, meaning we consider our client as a partner in the project. As such, we keep the client in the center, keep them informed, and regularly seek and adjust approach based on direct feedback.

### Proven PMO Methodologies

We are not just a vendor, we are a partner—One of our strengths is transparency in collaboration with the stakeholders especially from a multivendor environment, what we will be doing, and how we will help keep that collaboration and transparency across the board. We take pride in the strong interactions with our counterparts and the relationships that have been built. A direct quote from our Montana client's survey results was "we are willing to do anything and get as many SMEs involved to drive to the end result that's needed". Additionally, we leverage the weekly status report and the Project Portal to maintain communication with the client. We have a very strong Project Portal that is organized, clear, and concise to aid in location of information and status

Monthly meetings that are held are also documented within the portal. This emphasizes Cerner's ability to accurately and effectively communicate to our clients, provide project status updates, provide consistent documentation, and organization. Also, document actions, risks/issues, and meeting minutes. Our PM spends 90% of their time communicating to keep stakeholders informed.

We also maintain a living archive of the project. This allows a reference point to look back and review decisions, questions, specifications, and other items of importance as necessary. This archive is a Cerner differentiator by having a place to "go back" and ensure all



questions/specifications were answered or any action was taken. Cerner is results driven—we put a lot of emphasis on delivering results—which is what our clients need to meet their goals. We provide metrics or time frames to allow for clear visualization of progress.

## Alignment with CMS

Proven Experience with Successful Certification—Cerner incorporates guidance from the CMS MECT checklist into our approach. Our ongoing product development, roadmap, and design approach considers MECT requirements in addition to MITA to ensure our products position state Medicaid agencies to receive enhanced federal match. Like our other clients, we will work with DHHR, module suppliers, and other stakeholders to assist DHHR in federal certification using the CMS MECT criteria. Cerner's team has successfully partnered with clients to achieve certification by being there every step of the way with the CMS federal certification process. Additionally, we have matured our internal certification-related processes by incorporating the latest MECT checklist into our Medicaid solutions' project management and certification methodology.

#### Access to Data

Cerner puts priority data first—We consult with our customers on the type and content of data the need first. We push data earlier in the process; therefore, many decisions relating to design are informed by what we see in the data. Cerner consults across various data sources, well beyond medical claims. We interact with those various data sources beyond the pure MMIS. To identify the priority data, we consider first that for the EDS, we are dealing with multiple, disparate data sources and it is critical manage multiple activities: load historical data, manage metadata, monitor data quality and profiling, ensure controls over security, and provide reliable reporting. In support of the data integration activities, Cerner will conduct JAD sessions with DHHR to develop an understanding of the data in the source system. Our aim is to work collaboratively with DHHR to determine how the data will be utilized within the EDS. In these JAD sessions, we will assess the most efficient approach to extracting the data and complete documentation detailing data source location, timelines, formats and field and data location (tables, files, system, etc.). The team will compile that information to complete detailed data source to target mapping specifications, and operation routines and workflows that will enable the data to be refreshed, confirmed, and tracked so the priority data made available to the end users is accurate and timely. We take pride in our unique approach to JAD sessions. Seeking first to solve problems, the Cerner project and agile teams are created with a combination Medicaid, healthcare, data, analytics, data science and PMO expertise to ensure we capture all DHHR needs. The following illustrates the value proposition Cerner brings to JAD Sessions:



Figure 68 JAD Sessions Value Proposition



### 3.1 implementation/Rollout Planning

The Vendor's proposal should describe the Vendor's methodology, tools, and techniques for implementation/rollout planning. The Vendor should include what specific staging, readiness and deployment techniques it will use to determine the proper sequencing of deployment processes and functions required for successful implementation.

The Vendor's proposal should include, but not be limited to, details on its approach and methodology for the following:

- Completing all Solution Deployment task group related deliverables
- Obtaining approval of all Solution Deployment task group related deliverables and milestones
- Operational readiness and operational readiness testing (ORT)
- Emergency back-out strategy
- Pilot testing
- Confirming stakeholder readiness for new solution implementation

The Vendor's proposal should also include details on their approach to supporting and/or supplying:

- System documentation
- User documentation



- Reports
- Report distribution schedule
- Production environment, including the final production schedule
- Data conversion
- Pre-implementation training
- Updates to project management plans for operations

Cerner proposes a phased implementation across three releases to reduce risk and provide near-term value to DHHR. In the initial phase, Cerner will design, configure, customize, test, and deploy the requirements and features needed to replace the legacy DW system. In the second phase, Cerner will continue the processes initiated in phase one, will test and deploy Program Integrity, and incorporate fifty percent of the new data sources as per the RFP. In the final phase, Cerner will design, configure, customize, test and deploy Federal Reports, T-MSIS, and the remaining data sources as per the RFP.

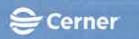
To ensure a smooth turnover, we will adopt a direct cut-over implementation technique. Following user acceptance and testing, the system will be deployed into the Production environment and the old legacy system will be turned off. Having completed many similar implementations over the years, we are confident that this will be a smooth cut-over. Should an issue arise that impacts system functionality, Cerner will activate a dedicated team to assess and address the problem immediately. For items that fail testing or are deemed non-Production ready and require emergency back-out, the content configured for deployment is controlled by RBAC and can be removed from specified users until the retested and approved. This includes data, data sets, reports, and queries. Cerner collaborates with DHHR to ensure that all data sources feeding into the new system are routed to the legacy system until the new system is ready for redeployment.

In case of an emergent issues post-activation, Cerner will either 1) initiate the Disaster Recovery system (see below) to continue day-to-day operations or will restore the new system to a recent point in time and reload all files to resume processing.

Disaster Recovery (DR) System: The HealtheIntent Platform is delivered from multiple AWS Availability Zones (AZs). Each of these AZs has core infrastructure services and equipment, including; telecommunications, power, hardware, and security infrastructure in place. In the event of a disaster, surviving AZs will carry the load from a failed AZ. Cerner's emergency response team can also be mobilized to remediate a failed AZ service. In case of disaster, Cerner will apply all available efforts to recover systems as quickly as possible. Cerner offers a Recovery Time Objective (RTO) of no more than 48 hours for recovery of the production Platform and a Recovery Point Objective (RPO) of 24 hours of the production Platform.

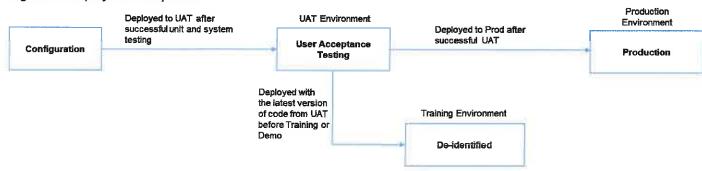
Restore Point: An EDS save state is established on a daily basis with a data warehouse "snapshot" to create restore points. We will create additional snapshots of the Data warehouse before any major release to ensure we have a restore point. In the case of a release that results in a critical issue, the data warehouse is restored using this snapshot and the new source files that were received after the snapshot will be reloaded to catch up all data. The release will be redeployed into Production following resolution and successful testing in the validation environment.

The new system will follow a sequential deployment technique as shown in the following. The new system will be configured and customized as per the approved design in the configuration



environment. It will be thoroughly system-tested in the configuration environment before being deployed into UAT Environment. Once the DHHR team thoroughly tests the system in UAT environment and Training Environment, it will be deployed into Production environment.

Figure 69 Deployment Sequence



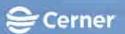
Should DHHR express an interest in piloting some of the analytics and/or reports for a particular county or a health plan, Cerner will work with relevant stakeholders to gather all the necessary requirements to design, configure and customize them for deployment to the target pilot group. These analytics and/or reports will be run and pilot results will be evaluated by DHHR and relevant stakeholders. Based upon their recommendation, Cerner will deploy or extend the analytics and/or reports to the entire population.

For implementation to be successful, each end user must be well-trained to ensure proper use of the system. We agree with DHHR that pre-implementation training is crucial for successful rollout of the new system. Cerner will work with DHHR to plan and define a comprehensive enduser training application in the Training Plan. All crucial features for user acceptance will be identified and reviewed with DHHR prior to implementation. Once reviewed and approved, Cerner will tailor our training materials and handouts to address those key features. Training will be delivered to DHHR identified end users who will be evaluated post-training to determine their understanding and readiness. Multiple rounds of training may be conducted based on the complexity of the features being deployed in the new system.

Cerner will conduct Operational Readiness Testing to assess that the EDS Project is ready for implementation release. We will assess all aspects of the project for readiness to transition to production. The ORT checklist identifies and tracks all key tasks that are crucial for the successful implementation of the system. At the end of ORT, an Operational Readiness Test Results document will be created. This will demonstrate that the new system meets all Service Level Agreements for system performance as defined in the scope of work. This is a living document and will be updated frequently with new analyses until the implementation phase is complete and the system is deployed into production.

# 3.2 Implementation Methodology and Timeline

The Vendor's proposal should describe an effective implementation and deployment strategy. In addition, the Vendor's proposal should include what the Vendor believes would be a realistic implementation approach and timeframe for the implementation of a solution that would meet DHHR's specifications. Please keep in mind DHHR desires a solution that can be implemented prior to the close of the existing DW/DSS contract. If some of the solution specifications are not part of the standard solution (available now



or via configuration), please describe a proposed phasing methodology to deliver full functionality. Please also provide reference to the Vendor's Initial Work Plan and WBS in Attachment E: Initial Work Plan.

Cerner proposes an aggressive, but achievable project timeline that will be implemented prior to the close of the existing DW/DSS contract. The first release focuses on takeover of the legacy system, allowing nearly a full calendar year for parallel testing and management of risk that may arise from the takeover. Risks included obtaining legacy data, understanding and planning for existing data transformation and report calculations, and includes time for detailed requirements analysis, configuration, and testing. Items that are inherently risky, such as CMS Federal Reports and T-MSIS begin with the Release 1 planning but are not scheduled to go-live until the final release. This approach allows Cerner and DHHR to plan for and adjust to unknown project variables.

Cerner will collaborate with DHHR to provide a Detailed System Design document template for the overall EDS Project. The Detailed System Design will follow industry project management and business analyst standards and include detailed data mapping and data flow documentation diagrams for all core and integrated systems/sub-systems, as well as sufficiently address the challenges represented within an integrated systems solution.

Given the sheer volume and complexity of projected inbound and outbound data sources, we understand data migration and the conversion will be a critical factor in the success of the new DHHR EDS Project. As one of the first tasks upon contract award, Cerner organizes and lead data, report, and analytic conversion strategy meetings with DHHR and other EDS Stakeholders to explore available options for data conversion. We schedule and hold data discovery events with data source owners to understand data transmission, data format, and data content to document in Interface Control Documents and source-to-target mappings. Once source-to-target mapping is in place, Cerner will request test files to begin testing extract, transformation, and load routines used to move data and interfaces from the legacy system to the new solution.

Cerner will develop, submit, and maintain a Conversion Plan with descriptions of appropriate skill sets, processes, technologies/tools, and any naming conventions inherent to the project. It will detail all tasks, timelines, and responsible parties for all conversion and migration tasks, as well as the entrance and exit criteria for each phase of the effort. Furthermore, this Conversion Plan will describe the following strategies:

- Data management strategy supporting integration, optimization, quality, stewardship, standards, and governance of data
- Reports conversion strategy to design, test and implement conversion of legacy reports to the new solution
- Analytics conversion strategy to design, test and implement conversion of existing legacy artifacts to the new solution

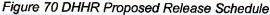
The Conversion Plan will also describe Cerner's approach to the following:

- Data conversion, cleansing, and migration
- Risk management for data conversion effort
- Testing migrated or converted data
- Reporting the number of records successfully converted versus errors or exceptions
- Cleansing data to prepare it for loading in the proposed solution, refined as necessary



- Resolving data conversion errors and issues
- Supporting the DHHR validation of converted data

Project implementation is the culmination of all SDLC phases. After Implementation Release 1, the EDS Project will transition to a month-long Operations Go-Live as shown in the following graphic. DHHR will then complete operational readiness testing, which will confirm that all project workstreams have been completed. At this point, all Implementation Release 1 functionality will be in operations. Implementation Release 2 and 3 will begin with additional requirements validation sessions and proceed through the SDLC activities in the execution phase.





<sup>\*</sup>Timeline shown is contingent on contracting signing and may change

During this phase, Cerner creates an DHHR-specific Implementation Plan based on our standard template to document an approach to handling staggered implementation of functionality and solution components for operations. The plan will be submitted for approval to DHHR via the agreed-upon deliverable process.

DHHR has outlined a phased DDI approach in the RFP which we strongly believe is executable and we are confident that we can provide additional value to DHHR by accelerating the timeline into operations and parallel testing. To minimize cost and time, Cerner will incorporate DHHR's specific requirements into our standard outline to provide a starting point for work plan development. This plan, developed in collaboration with DHHR, provides a more detailed outline of the projected tasks and resources. This plan will document an approach to handling staggered implementation of functionality and solution components. For the draft Project Work Plan, please refer to draft *Initial Work Plan* document within Attachment L: Additional Attachments located in the technical proposal.

<sup>\*</sup>Does not include option years: 6-8



Cerner's approach to managing the project schedule and PWP, along with the project plan itself, is the same regardless of the phase. Cerner considers the PWP, and to a lesser extent the Project Management Plan, to be living documents. We evaluate the health and status of the project weekly using the PWP. During these weekly reviews, Cerner examine tasks completed during the past seven days, ongoing tasks, and their probability of completing on time, and tasks starting in the next seven-day period and their ability to start timely. If any task appears to be slipping, project risk criteria may indicate risk(s) should be evaluated.

Cerner's project weekly and monthly status report templates (which DHHR will have an opportunity to review, modify, and approve) will be used during the weekly status meeting to review project status. They will include current risks to the project, our analysis of the project schedule/work plan, and impediments we see in remaining on track.

Cerner's Implementation Manager will be responsible for maintaining the PWP with the latest milestones and task updates. The updated PWP is approved by DHHR on an agreed-upon schedule and stored on the Project Portal for reference.

The Project Initiation phase includes, at a minimum, the events, tasks, and deliverables as outlined in the table for our response to Project Management Methodology. This table illustrates how the phases are aligned with the Medicaid Deployment Methodology process flow and the task groups DHHR has outlined.

# 3.3 Issues, Challenges, and Risks

DHHR is interested in any information that may help identify issues, clarify the specifications, reduce risk of the procurement, and identify issues and challenges of designing and implementing the proposed solution. Please highlight any concerns or recommendations in this section.

Based on our experience with projects of nearly identical scope, the table below outlines the identified Risk and Issue Management Strategies, including areas that are impacted and mitigation for improvement. Cerner is a dedicated partner wholly focused on the success of DHHR and other stakeholders. We continuously apply lessons learned to our internal processes and methods and will bring those lessons forth throughout the project to produce the value DHHR is seeking.

Table 41 Risks and Issue Management Strategies

Risk	Description	Areas Impacted	Mitigation
Data Quality	Cerner's implementation plan requires receiving good data from the MMIS and other sources. The quality of the data directly impacts the work necessary for the EDS module. The quality of the data may require re-work and alternate workflows to ingest the data into the EDS module	If there are significant issues with data quality requiring rework, the timelines proposed may be in jeopardy.	As soon as possible after project kick-off, Cerner will conduct Data Workshops. We will work with MMIS and other points of contact t schedule test data transfers. Risk c issues, if any, will be identified earl and remediation can commence. Risk and issues will be reviewed regularly and escalated, if needed, via the escalation process.
Legacy Universe and	Cerner allowed time in the schedule for requirements	If key discovery and design activities are not	Cerner's project team will prepare for the project kickoff and



Reporting requirements	validation and design sessions. With the volume of universes and reports, if clear specifications are not provided it may impact the proposed schedule. It will be important for DHHR participants to be available and execute responsibilities as dictated by the schedule.	performed according to the schedule, the timeline would need to be adjusted.	requirements validation session upon award of the contract. Cerner will work with DHHR and existing vendor on gathering information for turnover for legacy universe and reports and work on tasks and activities for DHHR to review and approve. Cerner's PM will update the PWP with approved tasks and activities and will provide updates on a weekly basis of execution of the PWP.
Number of Deliverables	Timelines for deliverables are on critical path. Formal review and acceptance processes are used for validation of deliverables.	If reviews are not conducted when scheduled and approvals granted after first review, implementation activities could be delayed.	We will prepare a deliverable review and approval schedule for DHHR, so it can easily view the schedule and understand the dependencies of missed review and approval cycles.  We will prepare a Deliverable Expectation Document (DED) for each deliverable to ensure DHHR approves the content we plan for the deliverables and conduct walk throughs of each deliverable with DHHR.
Leadership or project team changes at DHHR	Changes to team members through turnover or reassignment.	Changes to team members and leadership can often low the momentum and impact the vision of the project.	Cerner provides formal documentation of all key decisions that were made so that in the event of new incoming leadership or project team member they can understand what decisions were made and why. We document all project related material on the Project Portal:  Actions Decision Risk and Issues Training Meeting minutes and agendas Deliverables
Lack of formal data governance	Formal data sharing policies are not established across agencies.	Without policies in place a potential delay in signature of Data Use Agreements occurs	Cerner understand the absolute importance of data governance throughout the processes. We have experience working with data governance at other sites and recommend regular meetings to ensure data governance is frequently reviewed.

# The Risk Management Plan provides the following:

- Proactive identification and assessment of project risks,
- Development of risk avoidance,
- Transfer, mitigation, and management strategies
- Process to communicate, monitor and report on risk status
- Cerner's approach for root cause analysis



# Process used to quantify and qualify risks

Description of the appropriate methods, tools and techniques for active and ongoing identification and assessment of project risk. Risks and issues can be identified and reported by any project member to Cerner's PM, who is responsible for analyzing the risk/issue and impact and ensures the risk/issue is fully documented in the tool on the Project Portal. The PM will perform initial prioritizing and assign an owner. The log of risks and issues will be maintained for the duration of the project to document and monitor any risk/issue until it is resolved.

All risks and potential issues will be regularly communicated to the project team, the Risk Review Board (RRB), and the executive leadership. The PM maintains the risk and issue log to be current for all risks and issues that have been identified and presents them in the monthly RRB meeting for discussion and decision on mitigation strategies. The PM provides summary-level updates on the status of risks and issues for the project in the weekly status meeting and the monthly executive status report.

### 3.4 Lessons Learned

DHHR would find it helpful to understand what the Vendor sees as the successes and primary challenges in the implementation of similar systems. In order to gain this insight, DHHR would like to draw upon the Vendor's experiences with similar projects. Please describe any "lessons learned" from the Vendor's relevant experience and how those lessons learned will impact the Vendor's approach to this project.

Success of each project is dependent upon project implementation, team culture, expertise, leadership guidance, mentoring, and process management. Not all lessons learned are necessarily applicable to each subsequent implementation. However, we believe that these lessons will be invaluable in guiding the efforts of this project. The following is a generalized list of lessons learned from Cerner's past implementations.

Management are the Foundation for a Successful Project—Traditionally, health systems look for guidance from Cerner to help them map their Population Health goals. Montana, however, was the first population health module in Medicaid modularity history, and the MT DPHHS leadership had a very distinct vision of their module requirements. Because of the aggressive nature of the first release (5 months), we chose to delay detailed requirements validation sessions until later in the project. While we still received approval for the release, the implementation phase of the release and stage of the project that followed were hindered by misaligned expectations for certain requirements. It is now firmly part of our deployment methodology to ensure requirements validation sessions are completed to begin the project and are accounted for in all project scheduling collateral. In so doing, the ongoing management of requirements are rarely questioned. Our joint efforts are now better focused on content delivery and swift application of our implementation strategy.

Lesson Learned #2: Establishing Clinical Data Onboarding Methods to Create Holistic Views for Member Health and Program Performance—Cerner has onboarded thousands of different data sources to its Platform through defined processes and established workflows. That said, there are many nuances unique to state government that were not initially accounted for in our project planning. Cerner specializes in clinical data and understands that the most powerful program improvement metrics for providers, members and administrators cannot be



justified with claims alone. The more data available within the HealtheIntent Platform, the greater the potential for managing a member's health care, holistic health programs, and ultimately reducing costs for both providers and the State. Hospitals and health systems in the state lacked willingness to offer the data of its Medicaid members for inclusion in the combined health record within the Platform. When it became clear that provider participation may prove difficult, we developed a blueprint for providers to submit their data to the HealtheIntent Platform to increase confidence in our methodology and adaptable enough to fit their needs. It was imperative that this methodology not overwhelm these providers' technical resources (or "data stewards"), which was a central consideration in the blueprint. An additional benefit later realized by participating providers was that, by automating clinical data onboarding with the State, providers no longer had to manually submit clinical data for the various state programs they participated in throughout the year. This creates hundreds of hours a year in efficiencies for all parties involved. Since establishing the updated methodology for onboarding clinical data, the number of Montana hospitals sending data to the Platform on a recurring basis grew from one in the first 12 months of the project, to five in the past 6 months with 7 additional planned over the next year.

Lesson Learned #3: Delivering Successful Operations Management by Adapting Content to Evolving State Needs—More often than not. State requirements are developed months or years in advance of content deployment to meet those requirements. During that time, a state's vision of those requirements may evolve. Initially, this was a concept that challenged Cerner's project team during DDI and Operations. Until an effective requirements validation session is held, for example, it may be difficult to ensure alignment on strategy to meeting the requirements between the State and the Vendor. Therefore, effective planning of resources and scheduling may require several iterations for which flexibility by the vendor (Cerner) is crucial. Even following a successful implementation, the needs of State and/or CMS requirements may change. This level of flexibility in Cerner's Operations team post DDI was not initially accounted for. To address this gap, Cerner developed an agile approach to managing operational requests and maintenance activities which has proven to be extremely successful. In Montana alone, there have been over 200 service requests ranging in complexity from 1 to 500 hours to complete. Creating a more systematic approach to managing these requests has allowed Cerner to adapt its solutions more effectively, which in turn allows the State to optimize its programs.

Lessons Learned #4: Allow Sufficient Time for Preparation, Practice, and Review of Artifacts and Evidence Pertaining to R3 Certification Final Milestone review—Substantial planning, preparation, practice, and coordination is needed to ensure readiness for an R3 Certification Final Milestone Review. These steps are undertaken by the Medicaid module vendor, the state Medicaid agency, the IV & V vendor, CMS, and MITRE. As such, it is wise to begin gathering certification evidence and artifacts shortly after the solution has been advanced to production as each stakeholder (vendor, state Medicaid agency, IV& V, CMS, and MITRE) has a role in reviewing the evidence and artifacts to verify that the System Review Criteria and RFP requirements have been met. The state certification Project Portal repository should be structured so that all parties can easily find the Certification Evidence Packets and MECT Appendix B artifacts to be reviewed and verified. It is recommended that many practice sessions be performed, including system demonstrations and presentations showing evidence of how the system meets the SRCs and requirements. All action items noted during the R3 review should be carefully documented and followed up on to provide CMS/MITRE any additional information necessary.



Lessons Learned #5: Meeting Attendees Limited to Essential Stakeholders —Our experience in working with state DDI projects in 15 states has taught us the importance of identifying and inviting only the necessary/essential stakeholders to specific project meetings. In order to control project task durations and expense, it is recommended that the organizer of the meetings exercise due diligence in inviting the appropriate stakeholders (architects. decision makers, subject matter experts, etc.). This is critical to avoid project overruns in cost and duration. Strongly advise against inviting stakeholders who do not contribute to moving the task or action item forward. Meeting minutes/notes are distributed and posted after the meeting so that other team members can read decisions/outcomes and action items.

Lessons Learned #6: Developing the Project Plan Together and Getting Team's Input Before Showing the Project Plan to Them for the First Time —Planning is vital to success. A well-planned project is 80% of successful project delivery, and effective control and execution make up the remaining 20%. We have found that a good project manager and a few critical project team members can build the project plan most efficiently together as a team rather than the project manager building the initial project plan independently. A well-defined project plan includes and identifies the necessary tasks, durations, target start and finish dates, resources assigned, and task dependencies incorporating feedback from contributing and dependent stakeholders.

Lesson Learned #7: Do Not Move the Solution into Production until the State Agrees that System is Free of Defects or if Any That They Have Had Have Been Resolved —We believe that solutions need to be of high quality and free of defects before being moved into production. It has been our experience that, in some cases, solutions are moved into production too early in order to meet budgeted costs and planned target dates. Several of the implementations of the State-Based Exchanges fit into this category. Common characteristics of the failed projects include poor understanding of scope, lax change management processes, confusion over roles and responsibilities, and ineffective risk management. Successful projects excel at scope management and change control, risk management, and stakeholder management, and they include sufficient time for testing. The greatest amount of risk was identified in the Project Scope Management, Project Integration Management, and Project Time Management Knowledge Areas. We have experienced a health care exchange project that did not define the scope effectively—either including features that were not required for launch or missing functionality that was required.

Lastly, Cerner's HealtheIntent Platform is a SaaS-model offering that inherently meets DHHR's need for future scalability as well as beyond. As technology continues to mature, our flexible cloud-based infrastructure enables us to adapt and change without disruption to clients and their associated contributors of data. We built the HealtheIntent Platform on big data technologies and designed it for scalability to support the needs of large, complex organizations. It accommodates the need for flexibility to adapt and change without disruption to DHHR and its associated contributors of data. Cloud-based computing enables computing capacity on demand and systems can be scaled out instead of scaled up.

# 4. TESTING

The primary purpose of the Testing Phase is to determine whether the developed solution is ready for implementation. During the Testing Phase, formally controlled and focused testing is performed to detect errors, issues, and defects that need to be resolved.



The DHHR envisions the stages of the Testing Phase occurring concurrently with the Development Phase, with testing for each development iteration. Testing should occur throughout the development process, and the initial planning for testing activities should occur early in the project. The DHHR recommends that planning for the Testing Phase occur as early in the project as possible to ensure successful testing results.

# The DHHR defines the types of testing as follows:

- Unit Testing: Unit testing assesses and corrects the functionality of individual or small groups of code or modules. Unit testing ensures the various objects and components that make up the system are individually tested, and that errors are detected and corrected prior to exiting the development environment.
- Integration Testing: Developers perform integration testing after integrating completed components or modules into the overall system codebase. This testing ensures that the completed components or modules work at a level of efficiency acceptable by DHHR and that existing components and shared components have not been broken by the new module.
- Iterative Functional Testing: Iterative functional testing ensures that the components developed for each logical iteration of the system meet all functional and technical requirements as defined and approved by DHHR.
- System Integration Testing (SIT): System testing assesses the functionality and
  interoperability of the solution and the multiple other systems and subsystems it
  interacts with, such as databases, hardware, software, rules engine, document
  management system, identity management system, workflow, interfaces, and web
  services, and their integration with infrastructure into an overall integrated
  solution. This test includes a test installation and configuration of the solution,
  with a subsequent functional regression test to confirm the installation's success.
- Interface Testing: Interface testing ensures the completeness of interface development and the readiness of developed interfaces for integration in the wider system.
- Regression Testing: Regression testing assesses the integrity of the solution subsequent to the deployment of new solution components and/or fixes.
- End-to-End Testing: End-to-end testing is a quality assurance testing methodology that strives to ensure correct functioning and performance of applications in production-like scenarios. This methodology checks if an application performs as designed on all levels and across all subsystems. It is intended to encompass testing for the solution's key business and functional processes in their entirety from their start through completion.
- Security Testing: Security testing is the testing of functional, technical, infrastructure, and operational solution components to ensure the solution and operations meet all security requirements.
- Performance Testing: Performance testing ensures that the solution meets the
  minimum performance service levels required by DHHR, in terms of query and
  page response times under simulated load for a number of users for multiple
  concurrent functions in a given period. Performance testing scenarios take into
  account expected peak period volumes for application processing such as closing
  of open enrollment periods.



- Usability/Accessibility Testing: Usability testing ensures the solution user interface design takes into account usability considerations for its target user groups.
- Browser Testing: Browser testing ensures that the solution operates in the most likely configurations of browser versions and operating solutions. The Vendor is responsible for providing the machine configurations to perform all necessary browser testing. Browser testing also includes the testing of mobile view and mobile browsers.
- User Acceptance Testing (UAT): UAT ensures that the developed system meets all
  expectations of DHHR and all solution users. UAT test scripts cover all facets of
  the system, and the Vendor should be responsible for drafting all UAT scenarios
  and cases per DHHR's direction. DHHR will be responsible for identifying the
  participants involved in UAT, for the overall execution of UAT scripts, and for any
  ad-hoc UAT testing.
- Data Conversion Testing: Data conversion testing ensures that data migrated from the current solution are brought across to the new solution in a usable, complete, correct, and expected state.
- Operational Readiness Testing (ORT): ORT is performed to examine the operational capability of the solution and its associated processes and procedures. ORT focuses on the validation or verification of the processes involved primarily outside of the system.
- Parallel Testing: Parallel testing is a method of comparing the activities and/or data of the old solution against the new solution. In order to reduce risk, the old and new solutions run simultaneously for some period of time after which, if criteria for the new solution is met, the old solution is disabled.

The Vendor's proposal should describe the Vendor's understanding of the aforementioned testing types, and should also include detail on the approach and methodology for the following:

- All aforementioned testing types, as well as any others the Vendor plans to deploy
- Timing for execution of each testing type
- Usage of tools the Vendor proposes be used in support of each testing type
- Testing environments to be used in support of each testing type, and for all necessary testing activities
- Validating the traceability of requirements throughout the full testing process

Testing activities and processes are critical activities necessary for verifying application operation. We have designed testing to ensure deployment of a stable production environment. Testing specific to the Medicaid Deployment Methodology includes a proven testing methodology based on industry standards and previous Cerner Medicaid Deployment Methodology implementations. This methodology encompasses the functionality and processes related to the outlined testing requirements which are executed and adapted as project phases change. Cerner will collaborate with DHHR in all design of the testing activities to validate data and confirm proper functionality to meet DHHR's goals for effectiveness, efficiency, and accountability. We will ensure that the rights and dignity of the employees and public individuals they serve are maintained, provide quality and cost-effective support for all DHHR programs, and supply accountability through accurate reporting of revenues and expenditures. The objectives of the testing effort are to:



- Complete comprehensive end-to-end testing
- Ensure that key functionality meets State requirements
- Optimize application quality
- Ensure efficacy of the application in providing predictable results

Cerner's testing methodology involves five key activities: requirements analysis, test planning, execution, verification, and management of the testing effort. These activities often happen in parallel. The process is continuous to support further writing and refining of test scripts as design progresses. Requirements analysis and test planning refine the scope of testing as well as the time and duration needed to complete the testing effort. The HealtheIntent Platform has undergone extensive testing through our development and implementation projects. We have deployed applications of HealtheIntent for other modular MMIS using our proven testing methodology.

Recognizing that SaaS products are extensively tested prior to production release, the testing in the DHHR solution is targeted towards ensuring that configuration does not introduce any defects into the DHHR environment. In the SaaS environment, manual testing of client configurations offers the most flexibility and allows experienced testers to quickly find and verify defects. Writing and executing new test scripts happens more swiftly than would be possible with automated testing. Additionally, all code has been pre-tested and validated with 173 clients. We will collaborate with the Department to create a DHHR-specific Master Test Plan (MTP) that encompasses all testing along a realistic schedule. Together, we will develop the MTP for all project phases, following guidance from ISO®/IEEE/IEC 29119-3:2013 software testing standards to address the challenges inherent to the EDS Project.

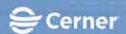
Cerner will develop the MTP during the initiation phase of the project. The MTP will contain a detailed plan of the test strategy. We will continue to refine and will finalize the Plan as the application planning and design tasks are completed. We will collaborate with other project stakeholders in documentation, testing, and the evaluation of the results between legacy and the new application for integration and interoperability. Additionally, Cerner will align with the Department in regard to other testing types that may be necessary during the project phases to meet the needs of the Department. Cerner's testing process includes the following testing types:

Table 42 Testing Types

Testing Type	Description
Unit Testing	Unit testing (also called component testing) is a level of software testing whereby individual units/components of an application are tested by Cerner's development team. The purpose of unit testing is to validate that each unit of the application performs as expected. Unit testing is designed to produce consistent results. It tests individual programs, modules to validate the design and technical quality of the application. Cerner's development teams use a dedicated internal development environment and Software Development Kit (SDK) for the given language for unit testing. The SDK is internal tool used by Cerner's development teams. SDK follows a proprietary process based on industry standards. Cerner conducts an audit process for each application group to ensure that the SDK is compliant with these standards.
System Testing	System testing (as part of the configuration work) tests the integration of logical groups of unit tests. All testing at this level is completed within the teams responsible for creating the units or strings. The purpose of system testing is to perform business functions with the intent of verifying the system meets the approved business requirements and to validate an application's accuracy and completeness in performing the functions as required and



	designed. The objective of system testing is to ensure the system meets the approved business, functional, and end-user requirements. System testing occurs in the Configuration environment as well as UAT environment depending on the test case objective. Cerner's System Testing will be documented in the System Integration Test Cases and System Integration Test Results, for DHHR's approval.
Integration Testing	Integration testing, performed by developers, tests system-level integrated functionality, including navigational flow, data functionality, and business functionality, by testing multiple components strung together as an integrated system. These end-to-end tests confirm the system as a whole meets its documented requirements and design specifications, and tests the integration of individual work products across all project teams, modules, and interfaces. During DDI, content is configured and tested in configuration environment, promoted to UAT for client testing and then promoted to production. Cerner's Integration Testing will be documented in the System Integration Test Cases and System Integration Test Results, for DHHR's approval.
Performance/ Load Testing	Performance testing verifies the performance of a system will meet service level agreements and measures the behavior of the system with increasing load (e.g. number of parallel users and/or numbers of transactions to determine what load can be handled by the system). Performance/Load testing will be documented in the Load and Stress Test Cases and Load and Stress Test Results, for approval by DHHR. Cerner completes Performance/Load testing in the Configuration environment before new functions are placed in the production environment.
Parallel Testing	Parallel testing validates the system achieves the same results as compared to another system (e.g., a legacy system) or previous software version. Parallel testing is simultaneously executed on both systems, based on tests of actual data. Parallel testing is considered successful only if the parallel test results meet the expected outcome (i.e. identical results) and have been approved by DHHR. Parallel Testing occurs in the UAT environment.
User Acceptance Testing (UAT)	UAT ensures that the system is generally available to a designated number of business users to verify functionality and check if all the requirements have been met. A key aspect of the UAT is that it leverages the work that was performed during prior stages. This approach will help users perform UAT on end-to-end processes and key functionalities of the application.
Regression Testing	Prior to the release of new system changes or configurations, regression testing ensures that any previously developed and tested software will continue to perform as expected and meet contractual requirements. The regression test will cover all applications that may have been affected by a program change implemented during the project.
Security Testing	Cerner uses a variety of security tools to perform both static and dynamic analysis of its applications to identify vulnerabilities. As part of Cerner's development process, these vulnerabilities are often addressed during the development lifecycle prior to releasing new code. For the EDS project, Cerner's testing team will conduct Security Testing as part of System Testing and UAT. Cerner will include test cases for role-based security and audit logs as part of the EDS Implementation, as approved by DHHR.
Usability/ Accessibility Testing	Cerner has dedicated user interface teams that ensure the applications are easily usable, ensuring the workflows are easy to use and appropriate to the skill level of the corresponding workflow. As part of Cerner's System Testing and UAT, we will work with the Department to define the workflows for your users at various levels and with various needs.
Browser Testing	Cerner tests the most likely configurations of browser versions and operating applications, including mobile view and mobile browsers. As part of System Testing and UAT for the EDS project, the testing team will ensure that configuration does not introduce any defects into the EDS Project environment and that it is compatible with various browsers.
Data Conversion Testing	Cerner conducts Data Conversion Testing as a standard part of the data ingestion process. Cerner conducts data conversion testing using sample files from new data sources to ensure that the file aligns to the expected format. Cerner will produce a data quality report for each data source to document that the volume and format of data is received as expected. Data Conversion Testing occurs in Cerner's Configuration and UAT



	environments
Interface Testing	Cerner conducts Interface Testing as part of the standard data ingestion process and Integration Testing. We have interfaces with over 1000 entities, and the number continues to grow, proving our experience at establishing, maintaining, and developing interfaces.
Data Conversion Testing	Cerner conducts Data Conversion Testing as a standard part of the data ingestion process Cerner conducts data conversion testing using sample files from new data sources to ensure that the file aligns to the expected format. Cerner will produce a data quality report for each data source to document that the volume and format of data is received as expected. Data Conversion Testing occurs in Cerner's Configuration and UAT environments
Operational Readiness Testing	Cerner performs ORT to assess all project areas for readiness to transition to production.

Cerner's testing types are inclusive of DHHR's additional testing types:

Table 43 Additional Testing Types

Testing Type	Description
iterative Functional Testing	Cerner conducts Iterative Functional Testing as part of each testing type. Iterative Functional Testing will be executed per release for all applications and functionality Iterative Functional Testing will focus on using existing system test scripts plus additional supplemental test scripts to demonstrate logical flow of data through the application components and business processes per release.
System Integration Testing (SIT)	Cerner conducts SIT during System Testing and Integration Testing. Cerner will include test cases that assess the functionality and interoperability of the application and the multiple other systems and subsystems it interacts with in System Integration Test Cases and System Integration Test Results, for DHHR's approval.
End-to-end Testing	Cerner conducts End-to-End Testing as part of each testing type. End-to-end testing will be conducted primarily in the UAT environment and optionally in the production environment per DHHR approval.

In addition to the above testing types, Cerner's MTP includes high-level schedules for testing activities. As part of Cerner's test planning activities, Cerner's project team works with DHHR to define the objectives, prerequisites and acceptance criteria for each test case. By defining the entrance and exit criteria for each test case, we ensure that the test case objective is met to DHHR's expectations. Based on these dependencies, we incorporate detailed tasks and timelines into the PWP. For each phase within the project, Cerner will conduct each testing type which will correlate directly back to the PWP.

Cerner utilizes the testing tool suite which encompass three different modules: Test Builder, Test Tracker, and Test Runner. This suite is a sophisticated, user-friendly set of Web-based testing tools. We are committed to automation and have begun the process of identifying the appropriate automated testing application that will be complementary with the Platform, our Medicaid Deployment Methodology, and DHHR's needs. We use our current testing a suite of tools for building, running, and tracking test cases/scripts created by the testing team. Authorized DHHR users will have access to the testing suite through the Project Portal.



Test Builder: The project team uses Cerner's Test Builder application to write test cases/scripts for requirements noted in the Requirements Traceability Matrix (RTM). The Test Builder assists the team to create high-quality test cases/scripts for DHHR workflows to give DHHR more accurate and relevant tests. Additionally, the Test Builder comes preloaded with hundreds of standard test cases/scripts that can be configured according to the testing criteria.

Figure 71 Landing Page of Test Builder



Test Runner: Test Runner runs published test scripts for the project. Test Runner provides a medium for executing test cases/scripts from any device connected to the network. Test Runner allows for screenshots and comments for each test action, which increases testing visibility. With a simple assignment process using Test Tracker, designated testers can start validation in seconds. Test case/script execution data, including test step status, attachments, and comments are relayed to the Test Tracker application. This data gives the right people the right information at the right time to resolve defects that arise during testing.

Figure 72 Test Runner Landing Page

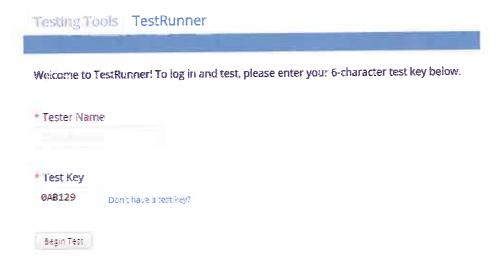
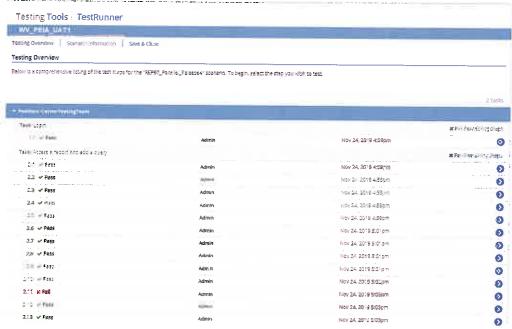




Figure 73 Test Runner



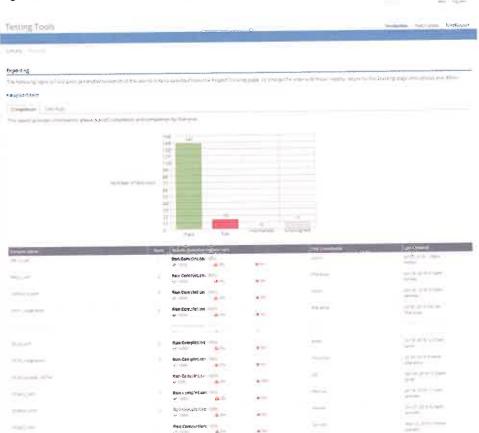
Test Tracker: Test Tracker communicates progress of all published test cases/scripts. Test Tracker assists the Testing Manager in managing the test case/script execution. Test Tracker serves as a centralized location for test case/script execution data and provides the necessary information needed to effectively coordinate large testing events. Furthermore, Test Tracker provides the Testing Manager with one-stop shop functionality to assign and track the test case/script execution and then to report on the status of testing. A test script import wizard allows users to import a test case/script, even if it was not created in Test Builder.

Figure 74 Test Tracker Landing Page









Testing is a critical activity for verifying that the application operates predictably and is designed to ensure the deployment of a stable production environment. Cerner recognizes the importance of developing all content following SDLC to ensure production system accuracy and stability. Cerner uses the environments below in conjunction with standard processes and technologies designed to provide content and data is developed, validated, and released in a controlled approach. We have included the following environments in our proposal. Cerner will work with DHHR to populate the data needed for activities specific to each environment:

- Configuration—The purpose of the Configuration environment is to enable the configuration and development of all EDS content. Source files may be real production data, de-identified data, or test data based on DHHR's needs and source system capabilities. Modification and validation of configuration and content occurs in the Configuration environment before promotion to the UAT environment.
- 2. User Acceptance Testing—The purpose of the UAT environment is to enable user acceptance testing. Our recommendation is for source files to be real production data. Once validated, content promotes to the Production and Training environments. The exact timing of these promotions can vary based on DHHR's guidance.
- Production—The Production environment is a stable and logical environment. Content is
  only updated once it progresses through the Configurations and UAT environments. Source
  files are real production data.

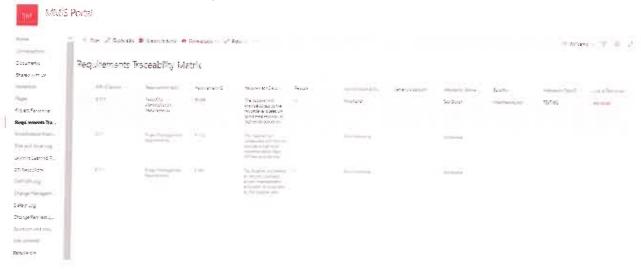


4. De-identified (Train/Demo) (de-id) —The purpose of the De-identified (Training) environment is to provide a stable and logical environment for user training. Content is only updated once it progresses through all previous logical environments. Our recommendation is for source files to be de-identified production data based on DHHR's needs and source system capabilities.

UAT is a crucial part of the testing process and allows DHHR to signify that a given requirement has been met. Cerner's testing team and subject matter experts will be onsite during the UAT test phase per DHHR approval. During this critical time, as part of Cerner's best practices, Cerner will provide support during test case/script execution. Here, defects will be logged and investigated and identify any other test cases/scripts or updates needed in a timely manner. As an example of the efficacy of this process, Montana's UAT testing phase required only three days for our expert team to execute 59 test scripts out of 94 total scripts with six client users and six Cerner testers. In addition to onsite support, Cerner's other project members and SMEs are available during UAT activities.

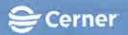
The Requirements Traceability Matrix (RTM) is a tool housed on the Project Portal that links requirements throughout the validation process. The purpose of the RTM is to ensure that all requirements defined for a system are traced back to the respective test script, deliverable, or attestation document. The test case/script name will be linked to the requirement in the RTM and will help provide traceability to the testing artifacts. The following screenshot provides an example of the RTM.

Figure 76 Requirements Traceability Matrix



The Vendor's proposal should also include detail on the Vendor's proposed source code management tool, as well as details on the project repository that will be used to store usage scenarios, use cases, requirements, designs, test scenarios, test cases, test results, and other project artifacts.

For source code management, Cerner uses GitHub Enterprise Server. GitHub enables collaboration across teams and has multiple integration options which allow Cerner to efficiently manage the source code development process. SaaS products and applications are designed, developed, and licensed by the vendor the state is not entitled to ownership rights to the core



program which includes Source Code. Cerner's project repository, the Project Portal, serves as project management website for the West Virginia EDS Project. It is a comprehensive document repository, allowing for maintenance, versioning, and advanced search capabilities of documentation throughout the life of the project. It houses the management plans, status reports, project risks, agendas, minutes, project deliverables, and other project documentation available to all designated project stakeholders. Throughout the project phases, the Project Portal serves as a hub of communications.

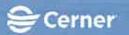
All documents contain revision history describing change details, change author, and precise timestamp. Changes made as part of the review and revision cycle are reflected within the comment logs and maintained on the Project Portal. The Project Portal also includes electronic tracking, routing, and archiving functionality. It records all activities associated with the development and maintenance of the documents, including document check-ins and check outs, version history, date and time stamps of edits, as well as the name of individuals who access and edits the documents. We have used Project Portal sites successfully in previous State Government EDW and data analytics projects. The Project Portal is designed for clear organization, ease of use, secure access, and it is easily customized to the requirements of the EDS Project. The Project Portal will incorporate, at a minimum, the following items:

Project Portal Items						
Contact/Phone Lists	Design decisions linked to requirements	MS PWP	System documentation			
Business Process Models	Detailed Design Documents	Minutes and agendas	Change orders and related documents			
Workflow Designs	Requirements Traceability Matrix	Issue tracking tool and other documents	All Deliverables (usage scenarios, use cases, test scenarios, test cases)			
RFP and Proposal Documents	Schedules and calendars	Policy documentation	Other project items over the lifetime of the Contract			

The project portal and ongoing documentation provides transparency and fosters a culture of collaboration through frequent and open communication with DHHR and other stakeholders across all phases of the project.

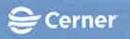
The Vendor's proposal should also present a narrative description that includes the following:

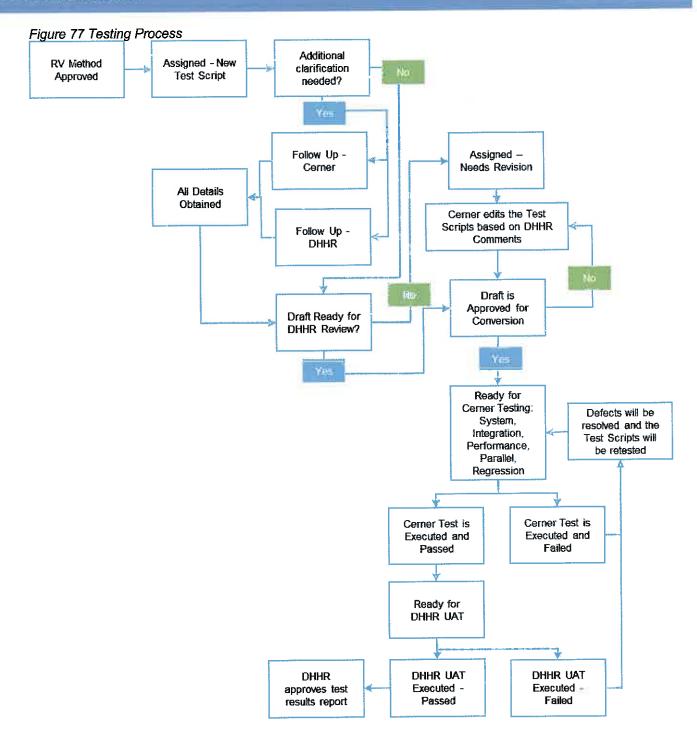
Cerner's Test Manager, in conjunction with the Implementation and Operations Managers will work with DHHR's Project Manager and testing team to build a plan for testing and update as necessary in order to ensure we adequately allocate time for all testing activities. These activities and timeframes will be noted in the PWP within the Project Portal. The Test Manager is responsible for monitoring and controlling testing processes within the scope of the MTP. Our MTP calls for the development of test cases that will govern the execution of each individual test type for DHHR's approval. These will include individual test cases (also referred to as test scripts) for each system change, including the test approach and tools. We will work collaboratively with DHHR to create test cases/scripts for each functional requirement. Cerner will not initiate any test cases/scripts until we have received approval from DHHR. This will help



to ensure that feedback from the Department is incorporated and that expectations are met to fulfill the requirements.

These test cases/scripts are used to complete testing and will provide the documented test results to the Department. Through our experience, we have a library of test scripts that we will leverage and configure according to DHHR's requirements. If a system change has been identified, the corresponding test scripts will be updated and submitted to DHHR for review and approval. Upon approval, we will execute the updated test case/script and produce test results for review. The Test Manager leads the testing team in the effort to create, execute, and report on results of all test cases/scripts throughout the project phases. We will track and monitor the test case/script writing, approval, and execution and will report the progress and results on a weekly basis (at a minimum). The following graphic depicts the testing process flow.





In the testing phase, there will be, at a minimum, a weekly status update. Cerner's testing process monitors for any testing defects and any defects that are logged will be communicated to DHHR.

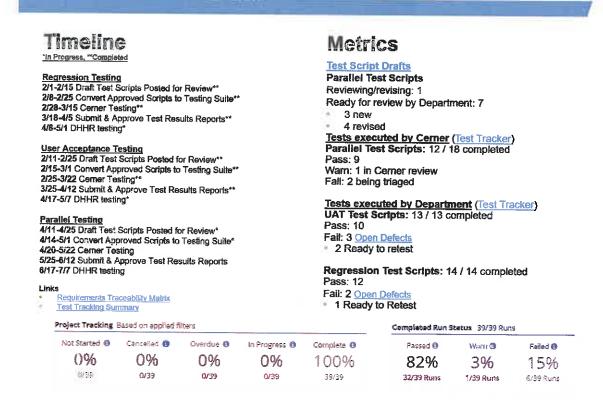
In order to maintain timeframes and expectations, communication between Cerner and DHHR is crucial. Cerner provides transparency to test results, changes, documentation, and much more



in order to keep these lines of communication open and therefore, ensure successful completion of the testing processes and adhere to DHHR's requirements. Following is an example of a weekly Testing Status Report.

Figure 78 Testing Status Report

# Testing & Requirements

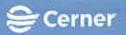


 Approach to obtaining DHHR's approval of the testing-related project milestones including the proposed acceptance criteria for each milestone.

Cerner understands the importance of keeping plans up to date and agrees to develop, maintain, and submit approved milestones, all SDLC documentation, including applicable requirements, acceptance criteria, test planning, technical specifications, and test results for DHHR's approval.

In the initiation phase, Cerner will conduct the Foundation Event, during which we identify and document acceptance criteria for testing-related project milestones. Acceptance criteria is documented in the MTP, the Documentation Management Plan, and/or Project Management Plan.

Our MTP provides details of the testing approach with entrance and exit criteria for each testing type. Cerner's project manager works with DHHR's project manager on defining the PWP: The PWP houses all milestones around testing events and activities that will be submitted to DHHR



for approval. Cerner commits to staff and execute all of the testing activities and phases for the milestones that have been approved by DHHR.

Additionally, test cases and test results reports are produced for each testing type and this will also articulate acceptance criteria to ensure that we have met the objectives.

# Approach to:

# 1) Working with federal partners, DHHR, the Project Management Vendor, the Independent Verification and Validation (IV&V) Vendor, and/or any other Vendor throughout all testing phases

Our testing methodology includes identifying stakeholders whether those are DHHR counterparts, other vendors, and IV&V throughout the entire process and is documented in the MTP. Cerner submits the MTP to the identified stakeholders for review and acceptance. We typically receive feedback from IV&V, the Department, and if DHHR requests other vendor input. Cerner incorporates the feedback into the plans.

The MTP includes the testing methodology, lists the roles and responsibilities of each individual and any stakeholders we need to engage for all testing activities and tasks.

For example, in the state of Montana, we sent out our test scripts for review by the Department and the IV&V vendor. During our testing events, we established bridge lines and invited each stakeholder and tester that Montana requested to attend and work through any pieces in need of review. Due in large part to our successful test script writing process, quality checks, and clear testing objectives inherent to our process, we achieved the following:

- In 5-months, 165 test scripts across all test types and 85 Attestations were completed
- Across 3 releases for Montana:
  - 557 test cases across all test types were executed
  - 104 attestations were completed
- Feedback received from the state of Montana: testing efforts continuously improve, great collaboration, and increase on quality.

Additionally, the state of Kansas attests that Cerner has provided good collaboration with multiple vendors and stakeholders.

# 2) Developing test cases and scripts to thoroughly test system functionality

As part of our testing approach, Cerner will create test cases based on the approved proposal from the Requirements Traceability Matrix and these test cases will include objectives and expected test results that will be submitted to DHHR for review and approval. The RTM will provide traceability from the requirements to a test case/ test script.

Cerner utilizes a Testing Suite that will be accessible on the Project Portal. In Test Builder, all test scripts will be included, and we will execute each of the test scripts in Test Runner. We can track progress of all tests through Test Tracker. DHHR will have accessibility to the Testing Suite to view test scripts that are being run and test tracker information at any given time.



The MTP outlines the methodology for testing which will include the development of test scripts, execution of the test scripts, and reporting of results.

# 3) Supplying documentation of each testing type

All aspects of the testing process and results are stored and accessible with in the Project Portal via the Testing Suite. In addition, the testing artifacts will be stored on the Project Portal and will be accessible for DHHR to view at any given time.

# 4) Preparing data for each testing type

For each of the testing phases, data will be prepared for the need of the testing type. Data conversion, data migration, implementation, and support services are included in the HealtheIntent Platform. We will leverage our proven project management methodology, Medicaid Deployment Methodology, to manage and execute all requirements for DHHR. Data needs for each testing type will be defined as part of the development of test cases/scripts, which will be submitted to DHHR for review and approval before tests are executed.

# Details on the support the Vendor intends to supply during UAT, such as the Vendor's approach to:

o Developing the UAT Plan, scripts, cases, timeline, and supporting processes

UAT ensures that the system is generally available to a designated number of business users to verify functionality and check if all the requirements have been met. A key aspect of the UAT is that it leverages the work that was performed during prior stages. This approach will help users perform UAT on end-to-end processes and key functionalities of the application. Additionally, any defect identified during UAT is tracked and monitored in the defect log. We work collaboratively with DHHR to determine the scope of UAT prior to the UAT testing phase. We will also work with the Department to ensure the test scenarios are approved in advance, work performed during prior phases is approved, and get approval and sign off on the user acceptance criteria and scope.

Cerner will collaborate with DHHR in the design of the Parallel, UAT, and Regression testing activities to validate the data and confirm the functionality is working as expected.

Cerner's testing team and subject matter experts will be onsite during the execution of the UAT test phase per DHHR's approval. During this critical time, as part of Cerner's best practices, Cerner will provide support during test case/script execution, in which defects will be logged and investigated and identify any other test cases/scripts or updates needed in a timely manner.

DHHR will approve test cases/scripts before execution begins. This ensures that feedback from DHHR is incorporated and that expectations are met to fulfill the requirements. We will track and monitor the test case/script writing, approval, and execution and will report the progress and results on a weekly basis (at a minimum).

Cerner has the ability to flex to meet additional UAT needs required by DHHR. Several options are available, including staff augmentation. Cerner agrees to work in good faith with DHHR to understand the concerns and propose suitable options.

### Preparing test data



We work collaboratively with you to identify the required data that is needed for UAT testing. Within the UAT environment, we will mirror production data. This helps to ensure that necessary data components are available for UAT testing.

UAT results analysis, identification of defect severity, and defect resolution

Please refer to the response directly below.

Defect tracking, repair, and reporting

Cerner is committed to working with the Department throughout the UAT process, and we provide support in multiple ways, such as on-site assistance, collaboration via an open bridge line, daily reviews of testing activities, and reviews of logged defects. Throughout this event, Cerner's test manager reviews and analyzes defects or issues logged for criticality and impact to overall project and go-live. We work any defects/issues based on the priorities set by the Department. All issues/defects and associated information are easily viewable on the Project Portal. While the Department is responsible for executing the tests, Cerner is responsive and proactive to provide guidance and assistance.

As part of our testing methodology, Cerner will work with DHHR to define success criteria for UAT, including critical UAT scenarios and definition of severity of defects. During the UAT event, Cerner's test manager will conduct daily reviews of testing activities, results, and defects. The objective of the review is to provide transparency of all testing activities. DHHR will additionally have access to test results via testing tools. Daily reviews provide test team members an opportunity to review specific test results and collaborate with DHHR to define the severity/priority of each defect and the proposed mitigation plan.

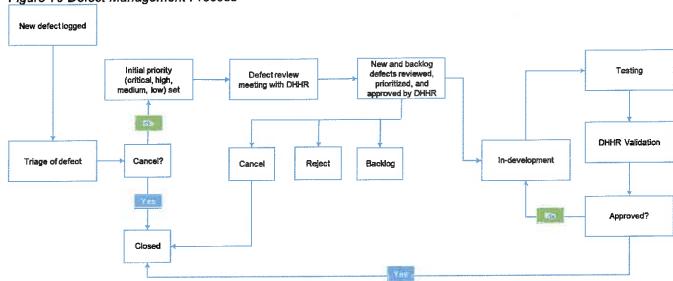
The overall process includes the following steps:

- 1. Define criteria for defect severity, priority, and impact
- 2. Define success criteria (critical UAT scenarios and resolved high/critical defects)
- 3. Daily review of results, including defects reviewed/assessed
- 4. Provide access to results

After the completion of UAT, a UAT Test Results Report will be provided to DHHR for review and approval. Additionally, as part of the UAT exit criteria, Cerner will provide a UAT results letter that includes test scenarios and cases executed, test results including evidence, list of issues and defects identified during testing, list of defect resolution and other processes used to ensure completion of the testing, and evidence that all defects that impact readiness or final release have been resolved.







# UAT final report that includes:

A written certification letter certifying that UAT was successfully completed A list of all defects and issues

A list of all resolved critical defects and/or issues

UAT is a crucial part of the testing process. Cerner's testing team and subject matter experts will be onsite during the execution of the UAT test phase per DHHR approval. During this critical time, as part of Cerner's best practices, Cerner will provide support during test case/script execution, in which defects will be logged and investigated and identify any other test cases/scripts or updates needed in a timely manner. For example, during Montana's UAT testing phase, in three days the team was able to execute 59 test cases /scripts out of 94 with six Montana users and six Cerner testers. In addition to the onsite support, Cerner's other project members and SMEs are also available during the UAT activities.

Cerner will provide a Test Results Report, similar to a written certification letter, but encompassing much more, such as an overview of the testing performed, including summary-level and detailed reporting, test script name, number of test runs, defects, and links to the necessary artifacts. This test results report will be submitted to DHHR after completion of the testing phase for review and approval. The following tables show the summary and detailed level of test case/script execution and defects found during that particular testing phase. The third graphic depicts the testing tool reporting and completed run status.

Figure 80 Summary Level Test Case/Script Execution and Defects

Total number of test scripts	Number of test scripts passed in 1st run		Number of test scripts retested and passed	Number of test scripts still in failed status
95	88	10	7	0

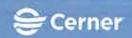


Figure 81 Detailed Level of Test Case/Script Execution and Defects

Requirement ID	Design document	Scenario name	Test run	Test objective	Test stetus	Defect ID	Test Tracker link	Comments
REPXX	Fed Report 123	REPXX_Sys temTesting_ Release1		For Release 1 the user executed Release 1 report in order to show that HealtheAnalytics can produce data that contributes to program performance, evaluation, and improvement.	Passed	N/A	REPxx_Syst smTesting_P aleasa1	

Figure 82 Project Tracking and Completed Run Status

Project Tracking	Based on applied f	ilters	Completed Run S	ms			
Not Started 6	Cancelled @	Overdue @	In Progress o	Complete 🚳	Passed 🚳	Warn 👁	Falled @
2%	66%	1%	0%	32%	51%	12%	37%
2/130	867130	\$2100	0/130	41/130	21/41 Runs	5/41 Runs	15/41 Runs

- The Vendor's proposal should also include detail on the approach to ORT including details on:
  - ORT approach
  - ORT final report that includes:
    - A written certification letter certifying that UAT was successfully completed
    - A list of all defects and issues
    - A list of all resolved critical defects and/or issues

Prior to go-live, Cerner will perform ORT which is conducted to affirm that the DHHR Project is ready for implementation. ORT assesses all aspects of the project for readiness to transition to production. Operational Readiness Test Results demonstrate that the solution meets all Service Level Agreements for system performance as defined in the scope of work. Results are a living document within the Project Portal and will be updated frequently with new analysis and status.

Cerner utilizes our Operational Readiness Checklist, referred as Operational Readiness Test Scripts by DHHR, to ensure all tasks are accounted for and documented. This checklist contains all events and activities including deliverables, list of defects, configurations, time frames, data sources, service requests, change requests, training materials, and many more. Cerner will work with DHHR in a collaborative effort to determine which tasks are tracked within the Operational Readiness Checklist.

With daily updates and ongoing progress being documented, this checklist prepares both Cerner and DHHR for the Operational Readiness Walk-Through. Once the Operational Readiness Walk-Through has been completed with the Department to validate the operational readiness of Cerner's proposed solution, Cerner's Operational Readiness Test Results Report will be formally signed off by DHHR prior to proceeding to implementation. The approval of the Operational Readiness Walk-Through and Results is the final step prior to Cerner sending an implementation letter and then Go-Live. This final step identifies that the project team has reviewed everything, all testing is complete, all defects are resolved, all milestones have been met, all tasks have been completed, and all DHHR's acceptance criteria have been met.



### 5. CMS CERTIFICATION

The Vendor's proposal should describe in detail the Vendor's experience with CMS Certification including the MECT, and a proposed approach to certification of the solution. In addition, describe the Vendor's experience in projects subjected to IV&V oversight, the approach to interaction with an IV&V team, and responding to IV&V findings.

Cerner's HealtheIntent Platform applications, including HealtheEDW, operate within the certification requirements set by the Medicaid Enterprise Certification Life Cycle (MECL). We recognize that DHHR and the vendor must fulfill these requirements. To that end, we will help the Department complete each SDLC phase and certification milestone within the established project timeline by employing the MECT v2.3. We applied our thorough certification process knowledge and experience to lead successful certifications of other state Medicaid agencies and we are prepared to drive system certification for DHHR, as well.

Certification planning and related activities will begin on day one of the signed contract. Our Medicaid Deployment Methodology embeds certification activities and tasks throughout our methodology. We will work alongside DHHR, the chosen IV&V vendor, and key stakeholders in Kickoff and Foundation to identify all tasks to be completed

Based on our experience supporting highly collaborative multi-vendor project environments in both the Medicaid and private sectors, DHHR can confidently choose Cerner as its Medicaid **Enterprise Data Solution** module Supplier to successfully implement a MiTA-aligned solution. Transparency and close collaboration are ingrained in our culture and we commit to working with you, the IV&V contractor, and other MMIS solution providers to achieve your goals and objectives for your new EDS.

throughout the project. It will be critical for us to collaborate with DHHR to ensure compliance with technical and business operations audits, compiling documentation for audit review and coordinating with the IV&V team in regularly scheduled meetings to healthy collaboration for the lifespan of the project. Our experienced project team brings their extensive healthcare industry expertise to better facilitate the CMS federal certification process.

As part of our Project Management Office (PMO), the certification lead is responsible for certification deliverables and artifacts. The certification lead participates in planning activities and meetings as requested by DHHR, coordinates the development of artifacts/evidence for assigned MECT checklist items with the certification team, develops presentation materials for the certification meeting, participates in presentation/demonstration preparation meetings, and will participate in the presentation to CMS. Currently, our Certification Lead and team are supporting certification efforts with the state of Montana. We are actively executing the certification plan for Montana and have begun to proactively gather and document Certification Evidence Packets (CEPs) and artifacts that will be used for Montana's EDW/Population R3 certification review (planned for Q3 2020).

In addition to providing the certification lead, we supply subject matter experts from a range of cross-functional Cerner teams for research and support. Our teams of dedicated associates provide the strategic and functional expertise necessary to ensure project success. Cerner's qualified personnel have significant health care industry experience in a wide array of subject matter areas, including population health, advanced analytics, and care management. The certification lead can leverage the opinions and expertise of our Knowledge and Terminology



team to share their insight with the Department and other project stakeholders on emerging health care initiatives or in gathering artifacts needed for a given MECT requirement. Our Clinical Data Design and Clinical Terminology teams are comprised of data experts, strategists, clinical designers, registered nurses, laboratory technicians and coders who will work hand in hand with the state to define specific rules as needed.

We manage the project quickly and efficiently by collaborating closely with DHHR, CMS, and the IV&V contractor. Cerner coordinates its efforts with the Department to ensure joint understanding and proper application of the organizational skills in the MECT 2.3 Toolkit. The following are the key tasks that we undertake to accomplish this:

- Map Project Documentation, Deliverables, and Artifacts to MECT 2.3 Appendix B
- Map RFP Requirements to the MECT v2.3 System Review Criteria (SRCs)
- Create Certification Evidence Packets (CEPs)
- Establish and maintain open communication with DHHR and the IV&V Vendor
- Support Remediation where necessary

We provide ongoing communication on the certification activities through each project phase via weekly and monthly status reports. DHHR's success if our success and we welcome the opportunity to participate in all required certification activities with you and your chosen IV&V contractor. We recently deployed applications of the HealtheIntent Platform for the Kansas Department of Health and Environment (KDHE) EDW modernization project. Our team led KDHE's artifact-gathering and demonstration processes, and our on-site subject matter experts were instrumental during the CMS review. This led to successfully achieving certification with no findings or corrective actions identified. According to a Cerner vice president quoted recently in *Business Wire*, "This CMS certification represents a major achievement as we help states analyze data from disparate sources to improve health care costs and quality." We are confident in our readiness to secure CMS certification with DHHR at the earliest possible opportunity.

### **ASSUMPTIONS**

Cerner absolutely understands the impact of a project this size on DHHR stakeholders and is prepared to work through stakeholder and schedule adjustments. The proposal is aggressive and intends to deliver value to DHHR early and often. For this work to remain on schedule, Cerner assumes stakeholders will be available during the duration of the project to ensure the work, design, and implementation are completed in a joint effort in order to meet the defined timeline.

- PM001: Cerner assumes the appropriate data use agreements are in place to allow access to the defined data.
- PM002: Cerner assumes that all data is being received by Cerner through the HIDUU.
- PM003: Cerner assumes we will be provided with the requested files and data dictionary.
- PM032: Cerner assumes the DHHR has a defined turnover plan in place with existing vendor containing report specifications, source data, and non-proprietary details for data transformation and calculations
- PM034: Cerner assumes we will be provided the IV&V checklist during project kick off and incorporate the checklists into deliverables.
- PM093: Cerner assumes we will work with the Department to define the UAT scope prior to engaging in this work.



- 1.3 Risk Management: Cerner assumes our tools will be used to track and manage the
  project. Example: Deliverables posted to our portal, risks logged and maintained on our
  portal, governance meetings and attendance, and all other tracking.
- 1.7 Training Approach: Cerner assumes the Department will provide notice of when training
  is expected to be conducted prior to implementation and any possible ongoing training.
- Cerner bases the implementation and training phases on adequate staffing for each event of our testing processes from DHHR for testing to be successful. Furthermore, our implementation response is based on allowing multiple waves of implementation and availability of stakeholder resources as stated in the timeline. If stakeholder resources are not available when outlined, timelines will be adjusted to accommodate the availability of DHHR stakeholders. In good faith, Cerner and DHHR will mutually agree upon the implementation timeline and detail out training activities.
- Cerner is basing these testing phases on adequate staffing for each event of our testing processes from DHHR for testing to be successful. Department may not have the expertise, department needs to be prepared to take on UAT testing.
- Cerner, in good faith, will work with DHHR to identify needs and resources around UAT testing. If scenarios are very technical, DHHR might need additional resources in supporting the UAT.
- Cerner will have open access to the IV&V vendor. We assume adequate staffing from the
  Department to support all phases of the certification. Roles and responsibilities of these staff
  members as assigned by the Department will be provided (e.g., identification of team leads,
  responsibilities in brainstorming/collaboration events, etc.).
- Cerner assumes transparency on the part of DHHR and the chosen IV&V to identify the applicable MECT checklists and checklist System Review Criteria that are in scope for the EDS module and provide these to Cerner.
- Cerner assumes early identification by DHHR of planned reviews in the project lifecycle.
   Namely, the Department will identify whether the EDS module will require an R1 Project Initiation Milestone Review, an R2 Operational Milestone Review, and/or R3 MMIS Certification Final Review with CMS.



# ATTACHMENT J: MAINTENANCE AND OPERATIONS SPECIFICATIONS APPROACH

Instructions: Maintenance and Operations specifications ensure that the solution is fully functional and performing optimally until the end of the life cycle. The Vendor's response should include a narrative overview describing its approach to maintenance of its proposed solution, including updates to new versions of the underlying commercial off-the-shelf (COTS) products, and to configurations necessary to support changes in DHHR's business needs.

Use the response sections to provide specific details of the proposed approach to meeting the maintenance and operations specifications in each subject matter area. Responses should reference specifications and relevant mandatory requirements using the appropriate IDs from Appendix 1: Detailed Specifications and Attachment F: Mandatory Requirements. DHHR also expects the Vendor to propose its approach for meeting any narrative in Section 4: Project Specifications of this RFP.

# PROPOSED SOLUTION TO MAINTENANCE AND OPERATIONS SPECIFICATIONS

Cerner's solution provides speed to value and sustainable long-term stability to meet DHHR's maintenance and operations specification goals. DHHR will quickly realize the value of an integrated and modernized EDS and enhanced program management. In contrast to a traditionally installed and operating solution, with our proposed SaaS offering DHHR will accomplish program goals faster giving you optimal speed to value. Our experience in bringing systems live will help DHHR realize your goals sooner, to support better care, better health and lower costs for West Virginians. Further, you can feel confident that the EDS will be operated on a foundation of long-term stability to sustain growth stability into the future. Our solution offering brings DHHR the following benefits to meet your EDS goals.

Cerner Offers	DHHR Benefit	Our Demonstrated Ability
A broader return on investment with our proven and unique implementation strategy, enabling EDS to be up and running faster for greater speed to market and value	Proven delivery method that is based on a rolled- out release schedule designed to support shorter-turn release strategies, so the EDS is up and running faster	We completed a successful takeover for the state of Kansas, moving from a legacy data warehouse to a modular enterprise data warehouse. The state enjoyed rapid speed of value, having the system up day one with access to the capabilities of the solution From that foundation, we build upon what the state can do, based on the data we onboard and the content we deliver.  We successfully delivered our solution for the state of Montana in 6 months with the same DDI strategy.
Greater value through rich data by leveraging performance measures within our registries for analytics and improving program outcomes.	Gains the value of clinical data, meeting the go-live deadline and the need to improve quality of care through faster access.	Our solution and service delivery model proved pivotal in Montana's Tribal Improvement Program. Tribal populations in Montana often live in remote areas, far from providers and are often not as well connected to other MMIS populations. Prior to partnering with us, the Montana was not able to identify individuals in their Tribal population that were high risk, resulting in inefficiencies in connecting individuals with the right care.
Reliable and proven cloud-	Sound infrastructure for	Our application allows normalization of data outside



based SaaS offering	the WV Medicaid enterprise data application through our strategic partnership with AWS.	claims. It is a cloud-based data management architecture that will take not just claims data but also clinical data from any third-party system.  Our cloud foundation is reliable and well proven accommodating a million users logged into the platform, housing over a thousand data sources.
Technology that is widely deployed and proven to be successful  Reliable, stable EDS up and running more quickly.		Our alliance with Amazon Web Services SM (AWS) goes beyond hosting our data. There is incremental value that our clients have realized as our partnership continues to expand.  For example, in the Al arena, we continue to work with AWS to advance our applications and capabilities.
Focus on partnership into the M&O phase	Committed and dedicated team focus on strategic initiatives and maintenance	Many of our clients' goals change over time and we recognize this and strive to grow with our partners. Our staffing model for existing clients includes strategic resources focused on evolving with you.

Cerner often sees partnerships take shape in our industry. However, our strategic alliance with AWS goes far beyond what we can deliver for the current day needs of DHHR; it delivers to the state the cumulative knowledge and lessons we can leverage for DHHR from this groundbreaking initiative.

Two important benefits Cerner provides in the HealtheIntent Platform are experience and reliability. We have provided services for hundreds of clients and, thanks in large part to this experience, we boast the requisite expertise to provide the most reliable systems. Because of this, business continuity is tightly integrated in each of our essential business processes as well as the technology and information architectures supporting them. Cerner believes DHHR will benefit from its inclusion in an ecosystem that is continuously driving improvements in the architecture of the solution to ensure strength of business continuity.

Our approach to meeting DHHR's backup, recovery, and failover expectations while keeping focus on the daily needs of DHHR, includes automatic data backup services and highly skilled technology teams equipped to monitor and manage the DHHR environment 24 hours per day, 7 days a week.

# **Application Backup**

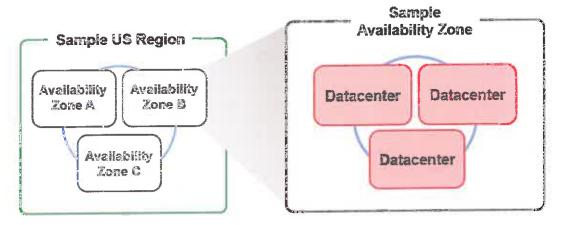
Cerner manages backup services suitable for all HealtheIntent Platform applications and systems. Our backup systems architecture is multi-tiered, allowing backups to be performed from a hierarchy of storage media. Data, including queries, jobs, reports, analysis results and documents, are redundantly stored on multiple devices across multiple facilities in a region. Once objects are stored, we maintain patency of availability by quickly detecting and repairing any loss of redundancy through automated internal processes.

Software and data are backed up and may be restored on readily available on-demand hardware, spread across multiple Availability Zones (AZs). We can leverage this hardware to restore software and data to DHHR as it was before an incident. File systems are backed up regularly, using automated procedures.



The AZs are physically separated within a typical metropolitan region and are in lower risk flood plains (specific flood zone categorization varies by region). The AZs consist of one or more discrete data centers, each with redundant power, networking, and connectivity, housed in separate facilities. The image below illustrates the relationship between regions and AZs.

Figure 83 Availability Zones



Data centers that host our HealtheIntent Platform are built in clusters in various regions of the United States. All data centers are online and serving customers; no data center is "cold." In the case of a failure of an individual AZ or a data center, automated processes move customer data traffic away from the affected area. In the example above two out of the three AZs could fail, and the production system would still be available.

# Recovery

Our dedicated technology teams are comprised of specialists in the corresponding technologies who monitor and manage the environment 24/7. These teams are responsible for making sure the environment is available and runs at optimal levels. They troubleshoot any issue with the system, including managing recovery efforts. To help keep our clients informed on the status of our systems, Cerner applications can be monitored via digital dashboards that will relay information concerning system usage and performance. These metrics can also be generated in reports to help plan the best configuration for facilities.

#### Failover

Cerner has designed the HealtheIntent Platform application architecture for high availability with various levels of redundancy. The HealtheIntent Platform distributes application instances and stores data across multiple AZs within a geographic region. A region is a physical location in the United States with multiple AZs which consist of one or more discrete data centers, each with redundant power, networking, and connectivity, housed in separate facilities. The multi-AZ configuration provides sufficient capacity and redundancy to enable traffic to be load-balanced across active AZs in the event of an AZ failure. We believe the architecture of the production environment provides us with the ability to recover quickly for the majority of system failures and database related issues that have the potential for service disruption with minimal data loss.



## 1. OPERATIONS

Refer to the relevant maintenance and operations specifications located in *Appendix 1: Detailed Specifications* and pertinent narrative in *Section 4: Project Specifications* in this RFP to cover solution capabilities in this area. The Vendor should describe its approach to Operations below. The narrative response for this category should be organized using the appropriate subject matter area as per *Appendix 1: Detailed Specifications*.

Cerner operations has kept pace with the changes of the industry through constantly analyzing industry trends, best practices, and competition to bring enhanced value and support to our EDS clients. For example, as the use of cloud platforms matured, Cerner made the strategic investment to move our solution to the cloud. From experience, we have learned overlapping Project Initiation and Project Planning and operations project phases provides a sound approach and eases the client transition from Project Initiation and Project Planning to operations. The Operations Team is engaged through the entire life cycle of the project.

We are committed to continuous improvement of business and technical functionality. During the Maintenance and Operations phase of the project, we have continuous responsibilities for managing the entire project life cycle, using the Medicaid Deployment Methodology. Planning and schedule maintenance, change management, quality and performance management, risk and issue management, and updates to deliverable documentation are ongoing activities during this phase. Training will be managed and monitored per DHHR requirements.

The Communication Plan supports collaboration and is designed to avoid false starts and misunderstandings, which lead to dissatisfaction. Additionally, the Operating Procedures Guide and Help Desk Plan help to effectively manage DHHR and MES stakeholder time commitments by establishing clear policies and procedures for operation and support of the solution. When critical input is required for events like maintenance, process improvement, defect resolution, change management, testing and training, we will request DHHR staff assistance in review, approval, and planning activities.

OP001

The Vendor should ensure that its staff, as defined by the Department, are located on-site at the Vendor's local facility and readily available to the Department throughout each implementation stage.

We understand and meet this requirement. We believe it is imperative for our staff to be near DHHR to promote effective contract management. Having resources available in a mutually agreed upon location promotes successful working relationships through effective communication and immediate access in the handling and prompt resolution of day-to-day issues.

OP002

The Vendor should supply key staff resumes to the Department for review and approval prior to key staff beginning work under the contract.

We offer DHHR a team of key staff for this project consisting of highly experienced individuals whose talents and experience match DHHR's qualifications and expectations. Led by account manager, Stan Park, our team has the experience and knowledge to ensure that the new system is designed, implemented, and operated in a professional and high-quality manner that meets the needs and objectives of the Department and the citizens of West Virginia. All key staff meet the qualifications requirements for their roles.



**OP003** 

The Vendor should supply resumes for key staff substitutions to the Department for review and approval prior to key staff substitutions performing any work under the contract.

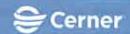
Should a key personnel role become vacant, the operations manager will immediately inform DHHR and will provide ongoing updates about the replacement process. We designed our recruitment approach to fill vacant key staff positions within a mutually agreed upon date of vacancy. In addition, we will ensure that any vacant Categorized Staff position are also filled within mutually agreed upon timeframe. Or within a mutually agreed upon timeframe days of DHHR request for new staff. We may also obtain written approval by DHHR for extended vacancies should the need arise.

OP004

The Vendor should collaborate with the Department to develop and maintain a process for authorized solution user support.

Cerner's support process is based on four important strategies:

- 1. Empower DHHR to create analytics independent of Cerner—The HealtheIntent Platform will enable DHHR users to perform their own ad hoc reporting independently of Cerner. Non-technical users can create ad hoc reports through our non-technical GUI and our data set designer. This level of reporting will allow DHHR to obtain analytics that is not already part of more than 1,000 measure, ready to use library. We also enable technical users to leverage SQL to create more complex, multi-step ad hoc reports. Lastly, we have a dedicated team to support DHHR in creating ad hoc reports through our data science team.
- 2. Provide word-class analytics support services—Cerner is committed to continuous improvement of business and technical functionality and will collaborate with DHHR to develop and maintain a process for authorized application user support. During the Maintenance and Operations phase of the project, we have continuous responsibilities for managing the entire project life cycle, using the Medicaid Deployment Methodology. Planning and schedule maintenance, change management, quality and performance management, risk and issue management, and updates to deliverable documentation are ongoing activities that span all project phases. Training and application user support will be managed and monitored per DHHR requirements.
- 3. Leverage automated data quality technology and services—Cerner has extensive experience in loading data from hundreds of sources through the life of the client contract and our Data Quality Monitoring. Operations monitoring will provide DHHR with the automatic review and analysis of data coming into the platform and identify any potential errors. For example, Data Quality Monitoring detects late arriving files, incomplete files, data volume variance, invalid codified values, improperly formatted data, suspect data and integrity checks. These automated validations and the corresponding Cerner services ensures that data quality issues are identified and resolved promptly. For more details on Data Quality Monitoring, please refer to the *Data Quality* section in the Attachment H: Technical Specifications Approach located in the technical proposal.
- 4. Reuse Content and Expertise—Cerner's experience with both traditional health organization clients across the country and Medicaid clients will provide West Virginia with insights that have been discovered as part of our work across the country. As we work with our clients through updates to regulatory programs, national benchmark



standards, and national programs, those lessons learned will be available to West Virginia to quickly and accurately pursue cutting edge analytics.

OP005

The Vendor should provide a help desk Monday through Friday, 8:00 a.m. to 5:00 p.m. ET.

Cerner's support is staffed with a combination of application and technical support professionals with domain expertise in various disciplines ready to assist DHHR during state business days and hours 8 am to 5 pm ET. In addition, critical support services through our Immediate Response Center (IRC) are available on a 24x7x365 basis. Critical problems may include failure of system components, stale data, or sudden failure of Cerner software applications.

OP006

The Vendor should maintain and ensure contract personnel staffing levels and competencies to support software applications, data integrity, analytics, user training, and contract administration pursuant to Service Level Agreements (SLAs).

Cerner's Population Health Organization employs over 4,974 associates who also have extensive experience supporting 173 clients across our population health applications and loading multiple data sources for each one of those clients into our platform.

We have sufficient staffing to ensure all phase requirements are met without hindering the progress of other phases. The implementation and operations teams will operate as separate cross-functional groups, with resources specializing in their respective domains, for example project management, business analysis, analytics, data integrity, data architecture, interfaces, data conversion, testing, training, software applications, support, and contract administration to meet SLAs. Account manager Stan Park oversees both the implementation and operations teams throughout the life of the project and ensures appropriate staffing and skill sets are aligned with each project phase.

Our experienced team members are knowledgeable in working in complex multi-supplier environments. Cerner's team members understand the need for effective, open communication and collaboration with other West Virginia partners to meet the operations objectives and metrics outlined by DHHR.

OP007

The Vendor should maintain adequate staff to perform analytic functions including, but not limited to:

Cerner will maintain a team of individuals dedicated to collaborating with DHHR to provide analytical functions within our application set. Our team has extensive experience working with our Medicaid clients to support them in building new queries, data sets, and perform advanced analytics. Additionally, we have a data science team dedicated to supporting our Medicaid clients in performing in-depth what-if analyses, predictive modeling and forecasting, program and policy simulations, advanced statistical modeling, and so much more.

OP008

Collaborate with the Department to develop and implement provider performance metrics for specific populations and Department programs

Cerner's experience working with traditional health organization clients and Medicaid clients has resulted in a data and insights platform with out-of-the-box content immediately available to begin tracking and monitoring provider performance for specific populations and programs. We offer more than 1,000 quality measures, such as the Adult and Child Core Set, and the ability to track and monitor outcomes through analytics based on claims and clinical data. Additionally, as part of our implementation strategy, we will collaborate with DHHR to identify additional provider



performance metrics that the Department requires. Unique DHHR metrics leverage the same infrastructure as out-of-the-box metrics which enables highly configurable and complex metrics.

Our application provides the capability to produce many CMS reports, including a catalog of typical MMIS Management and Administrative Reports (MAR) as well as the suite of Medicaid and CHIP Business Information Solution (MACBIS) reports such as CMS-21, CMS-37, CMS-64, CMS-372 and CMS-416. Cerner generates the reports that include information for the CMS-64 and CMS-21 in a format that will support manual entry into the CMS automated Medicaid Budget and Expenditure System/State Children's Health Insurance Program Budget and Expenditure System (MBES/CBES).

**OP009** 

Evaluate credibility and efficacy of measures and baseline comparisons and recommend improvements where appropriate

We are highly experienced with claim and encounter data and can provide insight regarding the quality and types of data needed for MCO performance monitoring, outcomes monitoring, rate-setting, network adequacy/access to care, and public accountability. To support these efforts, Cerner includes over 1000 pre-defined quality and outcome measures. For example, being able to track and measure individuals with a chronic condition such as Type 2 Diabetes and on an appropriate treatment regimen to control and improve blood sugars to avoid hospitalization due to critical high or low blood sugar incidents. These pre-defined measures are based on a combination of industry standards and Cerner standards that have been validated across many clients. Regardless of the efficacy of measures at other clients, we recommend and support evaluation of efficacy as follows:

Baseline West Virginia performance—Baseline and track quality and outcome measures over time. Trends from this granular data can identify not only which metrics are effective but also project future rate. For example, substance abuse consoling may have improved various outcome measures in the past two years; however, effectiveness has been diminishing in recent months. That conclusion might lead us to continue with the measure for a large population while investigating a new measure for a sub population that did not respond.

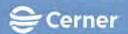
Compare performance to industry benchmarks—Focus on metrics with the greatest opportunity for improvement.

Evaluate metric to outcome correlation—Evaluate correlation of quality measure to the desired outcome. For example, if diabetic foot exams rates increased by 10%, did the number of foot amputations decrease as expected? If not, are there other metrics that are correlated? Analysis may also include what if calculations. For example, if we can increase immunization schedule compliance, how will drug and inpatient care utilization be reduced? These models can be as simple or complex as desired. Cerner will also recommend models based on industry trends and lessons learned across our client base.

OP010

Collaborate with the Department to develop analytics for payment reform activities including, but not limited to:

We have extensive experience providing payment reform programs with clients who are state Medicaid agencies, commercial payers and healthcare providers. With these clients, Cerner has developed payment programs, monitored performance, shared performance with providers, generated the final performance per provider and evaluated model enhancements.



The most common incentive payment programs are based on quality measures related to wellness and chronic diseases. For example, the state of Montana is using CPC+ and PCMH measures to evaluate performance, update providers throughout the year via the web and calculate annual provider payments.

Cerner also has experience working with clients on bundle payment models including standard content for all 35 CMS BPCI Advanced and various commercial payer bundles. Standard content identifies bundle events, qualifying services provided during that bundle and associated costs. Based on those calculations, clients evaluate historical payments compared to equivalent bundle payments prior to implementing the bundle. The same calculations may be used once the bundle is implemented to determine bundle payments, evaluate overall bundle impacts and refine the bundle over time.

Clients also may predict future implications of a bundle. For example, compliance with one of our standard quality measures may be correlated with shorter length of stay and lower costs for a particular bundle. Accordingly, clients may want to emphasize that measure as one way to help obtain higher bundle performance.

In addition to out-of-the-box measures and bundles, we support development of unique measures and bundles based on DHHR interests. Cerner's analytics and data science tools will allow DHHR and/or Cerner experts to build evidence-based statistical and machine learning models that can serve as a foundation for a what-if analysis. This will provide likely outcomes to DHHR of specific program or policy decisions with the ultimate goal of enabling DHHR to make data-informed decisions when reviewing payment reform activities.

### OP011 Provider incentive payment programs

We bring extensive experience in providing incentive payment programs with clients who are state Medicaid agencies, commercial payers and healthcare providers. With these clients, Cerner has developed payment programs, monitored performance, shared performance with providers, generated the final performance per provider and evaluated model enhancements. Please refer to our response to requirement OP010 for more details.

# OP012 Provider shared savings models

The HealtheIntent Platform will allow DHHR to align provider incentives to quality and outcomes. We bring experience working with many shared savings programs including the Medicare Shared Savings Program (MSSP). Our experience includes a wide range of payment models with upside and downside risk. Cerner supports these models through every step including model definition, performance monitoring, feedback throughout the model period, final model results and evaluation of model enhancement. Please refer to our response to requirement OP010 for more details.

# OP013 Others as defined by the Department

We understand that DHHR's business needs are ever-changing and Cerner will work with you to address those needs in good faith as those needs arise.

### OP014 Participate in stakeholder meetings to interpret results of analyses

As part of our ongoing operations strategy, DHHR will have a dedicated team available to work with DHHR, stakeholders, and other parties to interpret the results of the analytics. We view the



interpretation of results as one component in a larger analytic project that requires close collaboration throughout and possible many follow-up analyses. As such, we will work with DHHR, stakeholders, and other parties to first ensure that the right questions are being asked, that the data needed to address the questions is available, communicate risks, timelines, and expectations of the analytic output. We believe it is important to be engaged with our clients throughout the entire life cycle of an analytic project because initial analytic efforts tend to reveal novel findings or unforeseen risks and dependencies that may warrant strategic pivots throughout the course of the project.

For example, in working with a client on coordinating care for their homeless population, we initially set out to identify the highest utilizers of social services in their homeless population, however, initial analyses revealed a number of members who were likely experiencing homelessness but were not categorized as such. Therefore, after meeting with the client we agreed to expand our analytic project to include members who have a high likelihood of currently experiencing homelessness as well as identifying current high utilizers. Through these discussions we also identified the opportunity to develop a risk score indicating a member's likelihood of experiencing housing instability in the near future allowing our client to get out in front of housing issues ultimately reducing costs and improving quality of life for more of their members. At each meeting, we leveraged our background and experience in statistics and research to provide accurate interpretations of analyses as well as discuss possible follow-up analyses that ultimately led to a more value project output than was expected at the initial engagement.

**OP015** 

Provide industry best practice analytics on behalf of the Department including, but not limited to:

Over the last decade, our clients have steadily increased their demand for advanced analytics including the ability to identify trends, patterns, and forecast future outcomes. To meet this need, we have compiled a highly skilled and seasoned team of data scientists to accompany the advanced analytic tools. Our data science team leverages industry leading data science tools and processes to better understand West Virginia's needs, dissect complex questions, design programs, and target interventions to maximize the impact of limited funds. In conjunction with DHHR, our data science team will determine the methods for finding or collecting data, including collaboration with data analysts and engineers to access existing sources, analyze and interpret data, and finally report conclusions from analyses. We apply modern development lifecycle methods to deliver actionable insights quickly and frequently while maintaining transparency, repeatability and leveraging peer-reviewed scientific research to reduce ethical concerns and biases in our analyses. such, DHHR can leverage our team of data scientists for a variety of reasons:

- Delivery of statistical analysis or predictive model that is highly tailored to DHHR's specific needs. For example, forecasting cost and utilization under Medicaid expansion or the implementation of a novel program or policy changes.
- Strategic guidance on novel data sources to incorporate into the existing EDS that may be critical for answering key policy and program related questions. For example, suicide rates are rising, but traditional claims data lacks cause of death information, requiring the incorporation of vital statistics.
- Education and support around algorithm development and data science best practices for ongoing DHHR analytic projects.



With the flexibility and speed of Data Science as a Service, accompanied by platform-based algorithms to reach many DHHR users and tools for in-house data science projects, Cerner can meet the growing demand for advanced analytics and enable DHHR to maximize your data-driven insights.

# OP016 Predictive modeling

Our experienced team of data scientists hold PhDs, MDs, and master's degrees in an array of disciplines including cognitive neuroscience, medicine, computer science, and management information systems. These experts bring real-world data science experience in the healthcare industry. Under the direction of our experts, our teams have developed predictive models to forecast program spending, identify the risk of maternal morbidities, sepsis, and avoidable readmissions to name a few. Through this extensive training and experience, our data scientists have developed a process that ensures the creation of quality predictive models while mitigating the risk of bias and ethical concerns. We do so by collaborating with end users throughout development, maintaining transparent documentation to ensure replicable findings are produced, consulting the scientific literature to ensure interpretable and stable models, monitoring and improving the performance of these models, and rigorously testing models for biases that may result in disparities in health outcomes across the population.

### OP017 Member risk scores

The HealtheIntent Platform contains Milliman Advanced Risk Adjusters to support population stratification and risk adjustment across a variety of use cases, including but not limited to enhanced payment reforms. Acknowledging that the best risk score is one tailored to a specific use case, our data science team has developed additional risk scores such as a maternal morbidity risk score for pregnant women that can be leveraged to efficiently allocate additional prenatal services to the riskiest members in your population. In addition, our data science services can be provided to work strategically and in good faith with DHHR to develop custom member risk scores for future scenarios. The same approach that we take when developing predictive models is deployed when developing member risk scores because a risk score model is a special case of a predictive model.

### OP018 Performance monitoring and benchmarking

In addition to the out-of-the-box content, the HealtheAnalytics application allows ingested data manipulation through queries, data sets, data model builders, and users who can create their own reports. In addition, our enterprise data warehouse supports importing external datasets and benchmarking measures used for additional reports. For example, DHHR will have the ability to review and track industry standard metrics such as HEDIS measures, Adult and Child Core Sets, and other quality performance measures. Given the importance of this data, Cerner uploads the HEDIS measures into the Platform where such measures undergo data quality and data validation for accurate reporting and analytics purposes for DHHR.

As part of our operations strategy, Cerner will work with DHHR to monitor new national standard benchmarks that are released and implement those with in our platform. As DHHR's business needs grow and change over time, DHHR users can independently create state-defined benchmarks based on the state's needs. If needed, our data science team is available to assist DHHR in the creation of new benchmarks and performance monitoring reports.



Evaluating utilization variances among providers

DHHR will be able to monitor participating provider and MCO performance against quality outcomes and trend applicable payment incentives. Analytics are used by our clients to monitor service utilization trends, gain insight into reducing unnecessary/inappropriate utilization of emergency health services, identify ED visits that are "non-emergent" or "primary care treatable", and analyze avoidable readmissions. As claims and clinical data is received into our platform, DHHR will have the ability to generate scheduled and on-demand reports to evaluate utilization variances among providers.

#### **OP020**

Creating provider profiles

The Analytics and EDS tools will allow DHHR to perform calculations across the population and overlay provider information across the data. By including attribution within the HealtheIntent Platform applications data, it will provide and understanding about a provider's overall metrics. With this, DHHR can perform mathematical and statistical calculations such as; ratios and proportions, statistical analysis, comparative analysis, financial trends, case-mix adjustments, rates such as birth and mortality, variance, regressions, correlations, standard deviation and error, confidence interval, mean, median, mode and ranges for the effective and accurate analysis and presentation of information on an online basis, analysis of historical data, identification and forecasting of trends, benefit modeling, provider-member-health plan profiling, program planning, program assessment, analysis of provider or contractor performance, quality assurance, and comparison of fee-for-service and managed care.

#### **OP021**

Others as defined by the Department

The HealtheIntent Platform and tools support DHHR users to access a variety of data and data sources outside of the EDS. Cerner enables analytics initiatives around multiple data sources today. We enable clients to harness big data analytics technologies to create actionable insights, set future vision, improve outcomes, and reduce time to value. Our application is built on big data technologies and designed for scalability to support the needs of large, complex organizations.

Our application has significant flexibility in data ingestion and the ability to receive data from almost any source. We understand that DHHR's business needs are ever-changing and Cerner will work with you to address those needs in good faith as those needs arise.

#### **OP022**

Advanced reporting abilities that include both ad hoc and a standard library of reports

By offering organized, actionable views of the data via standard turn-key content, HealtheAnalytics supports DHHR's process improvement initiatives with our standard reports and DHHR's ability to define custom reports. DHHR has access to a growing library of 100+ standard report templates based upon the most common use cases and newly emerging topics. Our application facilitates and provides the capability to produce many CMS reports, including CMS-372, CMS-21, CMS-37, CMS-64, and CMS-416. Examples of emerging topics with corresponding templates includes, opioid prescribing patterns, access to care and avoidable ER visits.

We continuously update and improve these reports based on client suggestions, changes in regulatory requirements and health care agencies' best practices. Subsequently, most reports and templates built for other clients are available to all clients. Each template includes built-in filters, calculations, aggregations, and corresponding proven visualization. Out of the box



reports may be used as is or modified to support unique DHHR criteria. Modification range from minor visual updates to revising underlying calculations and aggregations.

OP023 Support analyses that require advanced-level statistics

Cerner's data science application, HealtheDataLab, provides users with cutting-edge open source software that contains nearly any statistical functionality in existence today, with new techniques being added nearly every day by experts in the field. In addition to providing DHHR with the capability to perform advanced-level statistics such as generalized linear models, mixed-models, factor analysis, structural equation modeling, multi-level modeling and nonlinear dynamic systems modeling, Cerner offers a team of data scientists who can support analytics initiatives that require these advanced-level statistics. For example, with previous clients we have leveraged generalized linear models to determine program-level per member spend over time in comparison with alternative program options to aid in the continued funding of a cost-effective program. We have also leveraged multi-level modeling to assess variability of risk across providers which could be used to improve payment reform models.

OP024 Others as defined by the Department and pursuant to Service Level Agreements (SLAs)

DHHR's business needs are ever-changing and we will work with you to address those needs in good faith as they arise.

OP025 The Vendor should maintain adequate staff to perform operational functions including, but not limited to:

One of our key differentiators is the proactive, consultative support for helping our clients achieve their objectives. The depth and breadth of our population health resources are included as part of our proposed application. There is not an "add-on" to use the team's expertise and, in fact, we are proactive in pushing this expertise to our clients. Our shared services model is effective in providing the supplemental resources required to achieve the meaningful results over the life of the project.

Cerner will provide this same level of service for DHHR's EDS scope of work and contractual obligations. Our well-tested approach for ongoing operational services keeps the system and business operations running efficiently and smoothly throughout the life of the contract, providing reliable responsive services for DHHR members, providers, and other stakeholders.

OP026 Identify a primary and back-up point of contact for day-to-day operations

The operations manager tracks project performance measures to monitor our progress toward meeting the requirements outlined in the RFP and to assess how efficiently and effectively the work effort meets the project objectives. We continually monitor, evaluate, and assess project quality, risks, and the overall status of the project. The operations manager will be the primary point of contact for day-to-day operations. In the event the operations manager is unavailable, a back-up point of contact will be identified and available.

OP027 Maintain effective communications of project updates and problem resolutions

Cerner believes in close collaboration with our clients throughout the project lifecycle and will create a Communication Plan with DHHR to outline the communication of project updates and problem resolutions. Typically, project status reporting happens on a weekly and monthly basis with the ability to provide ad-hoc communication as issues and resolutions arise and are mitigated.



Maintain current documentation of operational processes and notify designated Department staff of operational issues and remediation plans within the designated timeframes pursuant to Department-defined Service Level Agreements (SLAs)

All questions and issues are tracked in service records (SRs) which include a record of notification to the Department as defined in the SLAs. Each SR has a unique number and assigned to the individual troubleshooting the issue.

Cerner maintains a support team that is available during all state business days, 8 a.m. to 5 p.m. EST for the HealtheIntent Platform and applications. In addition, critical support is also available via phone 24 hours per day, 7 days a week, 365 days per year where a resource responds to the critical issues immediately within the IRC. The IRC is committed to providing clients with the fastest possible solution or workaround to any critical issue that impairs the immediate operation of our system. A critical issue is defined as an issue that impacts system operations or causes financial or operational issues.

Cerner will create and maintain an Operations and Maintenance Plan that will provide the process for operations and maintenance for areas relating to architecture/hosting operations, monitoring daily operations performance, performing routine maintenance, maintaining user documentation, online help approach and documentation, configuration and change management, approach to enhancements and new requirements, maintaining system and training documentation, archiving requirements, tasks, timelines and responsible parties for design and configure/build tasks, reporting status against relevant service level agreements (SLAs) and schedule of major and minor releases. The PWP will document the milestones for submission and review of this plan to DHHR.

OP029

Ensure quality control procedures are in place and utilized and that issues are resolved when identified through quality checks

Quality assurance (QA) is focused on project processes, provides confidence that quality requirements can be fulfilled, and helps ensure the project processes used to manage and deliver the project's objectives are effective and being applied. It helps to ensure consistent and effective processes used to manage and deliver the HealtheIntent Platform applications. Our project team will perform regular quality assurance assessments to ensure Cerner meets contractual responsibilities.

During the initiation phase, the implementation and quality managers work with DHHR to identify stakeholders, establish governance, identify quality metrics criteria expectations, and to create the initial quality management plan. This phase is crucial to the quality aspects of the project and lay the foundation and criteria needed for the project, including necessary DHHR and MES stakeholder resource dependencies.

Quality planning during Implementation involves documenting how the project plans to demonstrate compliance with quality standards and manages problem remediation activities through Quality Assurance Governance. The Quality Assurance Manager educates all members of the project team regarding the Quality Management Plan (QMP) and keeps them abreast of the approach to quality assurance activities and quality controls.

The Execution phase is applicable in both the Implementation and Operation phases of the project. The Quality Assurance Manager will use the approved QMP and will begin to transition the Monitor and Control phases of the Quality Management Methodology (QMM). The Monitor and Control phase is applicable in both Implementation and Operations. The Quality Assurance



Manager will continue engagement ownership by managing continuous improvement, quality assurance, and controls. The Quality Assurance Manager will also continue to report, measure, raise any risk or issues, evaluate impacts, and mitigations.

Additionally, the proposed application includes our data quality monitoring services. These services consist of automated capabilities to identify quality issues and the corresponding services to ensure the ETL data acquisition process is performed in a highly-reliable manner. The system performs checks against incoming data sets to ensure that the data being sent from source systems is as expected. This includes macro-level checking for things such timeliness or ensuring a data set is not empty down to field-level validations such as expected data type, i.e. text, numeric, etc. We also support the ability for more advanced checks against data set trends. The system populates a status dashboard of incoming data sources that is monitored by the Cerner team. Should an issue with a source be found, the Cerner team will take steps to correct the issue and, if necessary, log the issue and alert the appropriate parties for further resolution. Any issues are tracked in our online issue tracking system, eService, through resolution. For more information regarding our data quality monitoring services, please refer to the *Data Quality* section in Attachment H: Technical Specifications Approach located in the technical proposal.

### OP030 Adhere to project and report delivery timeframes

The Implementation Manager will create a project PWP guiding the project through all phases beginning day one of the contract. This is a vital part of the project as it will be the baseline for all milestones and dates of tasks to begin and conclude. The PWP design begins during initial phase and solidified in the planning phase. Upon approval of the plan by DHHR, Cerner will use this as our baseline. The PWP will be transition to the operations manager to maintain through the Operations phase.

Our experience brings a highly reproducible process to DHHR that has been vetted through lessons learned and successes in other traditional health organization and Medicaid clients. We have templates available to expedite ETL, modeling, and report configuration. We have a large, experienced pool of data experts available to resolve project bottlenecks. With our experience, the state of Montana was able to go live in 6 months and consistently achieve results throughout operations.

# OP031 Conduct business use analyses to prepare operational reports

Cerner's ongoing operations strategy will include collaborating with DHHR to identify additional reporting needs based on business use analyses. Through that discovery, Cerner will work with DHHR to design new reports to align to your specific reporting needs as they evolve over time. Additionally, DHHR users will have the opportunity to design new reports independent of Cerner when the need for additional reporting arises. For example, Cerner worked with the state of Montana to define reporting capabilities leveraging unstructured data coming out of non-traditional data sources.

# OP032 Work with the Department to automate operational reports

HealtheAnalytics can generate and provide all automated and ad hoc reports to DHHR within the mutually agreed upon timeframes and within the report generation schedule. The application will provide the ability to store, retrieve, modify, and execute queries on a scheduled or ad hoc basis and allow all reports to be executed at various time intervals (e.g. daily, weekly, monthly,



quarterly). HealtheAnalytics can generate all reports in a format, medium and timeframe acceptable to DHHR.

As part of our implementation strategy, we will conduct strategy sessions, recommend best practices based on our experience, and work with you to define the operational reports DHHR would like to have automated.

**OP033** 

Others as defined by the Department and pursuant to Service Level Agreements (SLAs)

Cerner understands that DHHR's business needs are ever-changing and Cerner will work with you to address those needs in good faith as those needs arise.

OP034

The Vendor should maintain adequate staff to perform technical functions including, but not limited to:

Cerner provides the support necessary to provide the technical and business expertise to capitalize on all module functionally and respond to operational business needs. Our operations manager will be engaged early in the initiation phase to ensure they are familiar with the requirements and expectations. The operations manager will ensure Cerner all roles needed to support DHHR We will work collaboratively with DHHR regarding all service requests to perform all operational functions. Cerner will provide support to DHHR regarding reporting and analytic activities for the proposed tools, techniques, and staffing through training and by way of key personnel.

**OP035** 

Maintain systems by researching and resolving problems

As a SaaS solution, Cerner is responsible for maintaining the hardware platform and the underlying software for all of Cerner's clients. We have monitoring systems in place to proactively monitor our platform and proactively identify red flags. Our well-tested approach for ongoing operational services ensures the platform and business operations operate efficiently and will provide reliable and responsive services for DHHR, members, providers, and other stakeholders.

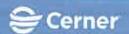
The proposed solution includes our data quality monitoring services. These services consist of automated capabilities to identify quality issues and the corresponding services to ensure the ETL data acquisition process is performed in a highly reliable. The system performs checks against incoming data sets to ensure that the data being sent from source systems is as expected. This includes macro-level checking for things such timeliness or ensuring a data set is not empty down to field-level validations such as expected data type, i.e. text, numeric, etc. We also support the ability for more advanced checks against data set trends. For more information regarding our data quality monitoring services, please refer to the *Data Quality* section in the Attachment H: Technical Specifications Approach located in the technical proposal.

Cerner is responsible for any problems that may arise and will work to research and resolve the issue. Our team will start with the root cause analysis and then work to resolve the issue as quickly as possible. We will provide a report to our client teams.

OP036

Maintain system and network integrity and security

We have extensive experience in delivering technology infrastructure, core network, industry standard security controls, servers, storage, and resources to support the entire Platform.



Today, we maintain system and network integrity and security to both our traditional health organization clients and our Medicaid clients. This includes the costs and procurement of sublicensed software, hardware, storage, and internal networking. It also includes ensuring that all components continue to meet the infrastructure requirements of our clients.

OP037

Develop and maintain configuration and customization of the solution, solution tools, and rules engine

Working in close collaboration with DHHR, Cerner will develop a Configuration Management Plan (CMP) for DHHR approval and implementation throughout the life of the project. Configuration management is the discipline of identifying, recording, evaluating, tracking, coordinating, reporting, and controlling system configuration decisions by performing supporting process activities that maintain the integrity of these items throughout the life cycle, including their versions, constituent components and relationships.

Through our implementation strategy, we will work DHHR to develop specifications based on the DHHR defined requirements and our recommendations based on best practices. All defined specifications will be validated.

It is important to note that our flexible platform will enable DHHR to define your own configurations using our flexible, non-technical user interface. For more advanced users, Cerner has SQL capabilities for users to complete complex, multi-step content.

**OP038** 

Establish, manage, and maintain the solution data exchanges

Our solution can control and execute all aspects of the ETL process. The HealtheIntent Platform receives data from any system, including MMIS, financial, and claims data, as well as non-traditional sources that may be required in the future, such as vital statistics, education, and employment.

Operations monitoring includes data quality monitoring services which consist of automated capabilities to identify quality issues and the corresponding services to ensure the ETL data acquisition process is performed in a highly-reliable manner. The system performs checks against incoming data sets to ensure that the data being sent from source systems is as expected. This includes macro-level checking for things such timeliness or ensuring a data set is not empty down to field-level validations such as expected data type (i.e., text, numeric, etc.).

Data Syndication API facilitates the bulk delivery of the HealtheIntent Platform data on DHHR defined schedule. It provides direct, low-level, asynchronous access to the information that the applications create, curate, and operate against. The HealtheIntent Platform solution can provide incremental data uploads to reduce the need for bulk data transfers.

**OP039** 

Maintain file specifications for solution data exchanges

The Data Integration Lead or Data Steward is responsible for gathering sample files, reviewing formats, and discussing strategies for conversion. The resource will need to have knowledge of the source systems and the ability to create data extracts and to complete transformations on the source files to conform with the HealtheIntent Platform file specifications. They also serve as a liaison between Cerner and technical resources with any sources sending data. Additionally, DHHR will be provided with an Interface Control Document (ICD) which will be maintained with any updates and/or changes.



OP040 Establish, manage, and maintain solution interfaces

The Interface Architect is responsible for the design, build, and test the transfer of data between systems. The resource will monitor interface project progress and manage project risks. Develop data mapping/modeling. Perform quality control/assurance on data and transfer/conversion processes. Additionally, DHHR will be provided with an Interface Control Document (ICD) which will be maintained with any updates and/or changes.

We have interfaces with over 1000 entities, and the number continues to grow, proving our experience at establishing, maintaining, and developing interfaces. Our application supports multiple formats and options for exporting and interface specifications necessary for models, metadata, and additional supporting information.

Cerner has a large API library to facilitate data syndication for data to be received and sent from the platform, as discussed in OP038. All APIs are well-defined and pre-designed features of our suite of applications. Nearly any type and form of data can be pushed (ingested) into our application's ingestion APIs. Data extraction consulting services are utilized to assist in extracting and pushing data into the ingestion APIs for each data source.

**OP041** 

Assure that new processes/new technology installations minimize negative impact on the system and authorized solution users

Once the Maintenance and Operations phase begins, Cerner performs ongoing maintenance in two categories to minimize negative impact on the application and authorized application users. First, maintenance of the DHHR-specific application that includes managing and maintaining DHHR-specific content, such as configured reports. For requests from DHHR and other stakeholders (change requests, defects, enhancements), Cerner works in collaboration with DHHR to review, approve, and schedule implementations. Second, maintenance of the shared SaaS platform. All additions to our applications go through regression testing, User Acceptance Testing (UAT) to show that newly implemented changes will not negatively impact the platform prior to being placed in production.

Maintenance of the shared platform can generally be performed without the need for downtime. If downtime is required, maintenance windows will be scheduled during off hours to prevent impact to the use of the system. Advance notice of maintenance windows will be provided to DHHR for planning purposes. DHHR will receive notification through an online monitoring tool.

Our production monitoring activities are designed to address system interruption and provide awareness of potential issues to DHHR and MMIS Stakeholders. Cerner focuses on identifying and addressing application impacts quickly through both short and long-term remediation. Our approach enables problem management, root cause analysis and problem remediation.

OP042

Schedule and execute file transfers with external solution data exchange sources

As part of our implementation and ongoing strategy, Cerner will work with DHHR to define an ETL schedule based on the needs of DHHR. The scheduled processing of the ETL will be designed and mutually agreed to as part of implementation. Typically, source systems will have varying transfer frequency and timings. Data is typically refreshed daily with subsets of the processes refreshing more or less frequently as needed.

The HealtheIntent Platform shares information via open application programming interfaces (API,) enabling the sharing of information across different systems. Data may be sent to Cerner



or from Cerner via these APIs. HealtheEDW offers both data export functionality via secure HTTP, in the form of flat files; as well as Data Syndication, which allows users to interact with open APIs to pull data at runtime and load data into another system outside of our cloud hosted system.

**OP043** 

Provide regular status updates to the Department on system issues and system updates

The operations manager is responsible for tracking project performance measures to monitor our progress toward meeting the performance requirements outlined in the RFP and to assess how efficiently and effectively the work effort meets the project objectives. We continually monitor, evaluate, and assess project quality, risks, and the overall status of the project. We maintain a Capacity and Performance Plan, which identifies the metrics that will be used to measure and manage the project's performance. It also details the process and tools to collect the necessary base measures, calculate the metrics, analyze the results (including quantitative analysis), and report performance results.

The operations manager collects and analyzes performance measures for individual project management, development, and maintenance processes. This information will be provided in the weekly status reports and monthly executive status meetings.

**OP044** 

Maintain a system of checks and balances such that the underlying data are consistent, complete, and accurate

Cerner's data quality monitoring consists of both automated and manual tools to maintain data integrity, consistency, accuracy, and timeliness of the application data. Automated data validation routines ensure data loaded is consistent and complete as compared to the balance files. We provide a library of over 150 quality checks and are continually adding to this number. For a list of additional quality check examples, please refer to the Data Quality Checks table within the *Data Quality* section in Attachment H: Technical Specifications Approach located in the technical proposal.

**OP045** 

Develop and gather requirements

The requirements management process begins with requirements gathering. Gathering requirements consist of extracting and compiling requirements contained in the RFP, contract, and any other relevant documentation. Requirements analysis begins after the completion of gathering activities. Cerner will formulate a proposal for DHHR review and approval on how we will meet each requirement.

Requirements validation sessions with DHHR will ensure we fully understand the requirements. DHHR approves our proposal for how to meet the requirements, and through collaboration identification and documentation of any missing requirements occurs. The goal of these sessions is for DHHR and Cerner to discover, reveal, articulate, and understand all project requirements.

**OP046** 

Design, implement, and maintain solution architecture

As a SaaS solution, Cerner is responsible for maintaining the Platform hardware and the underlying software for all of Cerner's clients nationwide. We will provide this same level of service and care for DHHR for the scope of work and contractual obligations. Our well-tested approach for ongoing operational services keeps the system and business operations running



efficiently and smoothly throughout the life of the contract, providing reliable and responsive services for DHHR, members, providers, and other stakeholders.

OP047 Monitor solution performance and resolve issues

Cerner's production monitoring activities are designed to address system interruption and provide awareness of potential issues to DHHR and MMIS Stakeholders. Cerner focuses on identifying and addressing application impacts quickly through both short and long-term remediation. Our approach enables problem management, root cause analysis and problem remediation.

OP048 Analyze test plans, technical specifications, and test results

The Testing Manager will lead the testing team in the effort to create, execute, and report on results all test plans/scripts throughout the project phases. We will work collaboratively with DHHR to create test plans/scripts for each functional requirement. DHHR will approve test plans/scripts before any execution begins initiation. This will help to ensure that feedback from DHHR is incorporated and that expectations are met to fulfill the requirements. Cerner will track and monitor the test plan/script writing, approval, and execution and will report the progress and results on a weekly basis (at a minimum).

OP049 Provide system documentation

Cerner is committed to continuous improvement of business and technical functionality. During the Maintenance and Operations phase of the project, we have continuous responsibilities for managing the entire project life cycle, using the Medicaid Deployment Methodology. Planning and schedule maintenance, change management, quality and performance management, risk and issue management, and updates to deliverable documentation are ongoing activities that span all project phases, as illustrated in the following graphic. Training will be managed and monitored per DHHR requirements.

OP050 Others as defined by the Department and pursuant to Service Level Agreements (SLAs)

Cerner understands that DHHR's business needs are ever-changing and Cerner will work with you to address those needs in good faith as those needs arise.

OP051 The Vendor should participate in project meetings as directed by the Department.

Cerner understands we are early in the lifecycle of evolving West Virginia Medicaid Enterprise. We acknowledge that we must provide maximum flexibility in our communications to meet all service and performance expectations across the multi-supplier environment. We are committed to participate in governance meetings across the enterprise to ensure we are fulfilling DHHR's operational objectives and requirements.

OP052 The Vendor should work collaboratively with the Department to explain and support electronic data solution Vendor-based operations and reporting to stakeholders, auditors, and other parties when necessary.

Cerner is committed to working in close collaboration with DHHR on their reporting needs. Cerner will create and maintain an Operations and Maintenance Plan that will outline the operations procedures. This plan will outline how operations and support processes will operate, whom DHHR will need to contact and what to do for escalations. Cerner will be providing weekly and monthly updates on operations throughout the phase and reporting to DHHR and any other entities as needed.



OP053 The Vendor should participate in audit activities including, but not limited to:

We welcome the opportunity to collaborate with DHHR and the IV&V contractor and to participate in required audit activities, such as meetings running reports, providing documentation, and providing application access to requested authorized users. We will work with DHHR and IV&V contractor to gather information to prepare and target presentations.

OP054 Attend meetings

Yes. Please refer to our response to requirement OP053.

OP055 Running reports

Yes. Please refer to our response to requirement OP053.

OP056 Providing documentation

Yes. Please refer to our response to requirement OP053.

OP057 Providing access to all system components and modules as requested by the Department

Yes. Please refer to our response to requirement OP053.

OP058 The Vendor should support the State with data integration needs prior to and subsequent to the solution's implementation.

Based on our experience the most time-consuming tasks of project implementation is defining, documenting, and implementing the multitude of data sources. If deemed acceptable by DHHR, we can begin data ingestion activities once an individual data source is defined and designed. This process would enable the development team to begin their work earlier and will result in completing development earlier in the timeline. Cerner looks forward to working with DHHR to determine the optimal approach and options which may result in a shorter timeline wherever possible. Cerner understands that DHHR's business needs are ever-changing and Cerner will DHHR to implement additional data integration needs throughout the life of the contract, in good faith, as those needs arise.

OP059 The Vendor should provide the Department with a Data Management Plan as defined in Appendix 2 - Deliverables and Milestones Dictionary.

Cerner will develop, maintain, and implement a DHHR-approved Data Management Plan.

OP060
The Vendor should agree to perform according to approved Service Level Agreements (SLA) and identified Key Performance Indicators (KPI) with associated metrics in the areas of system availability, performance, data quality, and problem management, and should consent to the Department retaining a percentage of payment if agreed-upon metrics are not achieved.

Cerner will work with the Department on approved SLA's upon contract signing as it relates to KPI's. Per Appendix 5 of the RFP, we understand that SLAs and associated KPIs may be added or adjusted by mutual agreement and formalized during the term of the Contract.

Cerner understands the importance of system availability and the need to minimize any negative impact to users. As a SaaS platform, Cerner performs refresh and maintenance activity across the system as a whole; thus, we are not always able to comply to specific client



requests. If we do have an update that impacts availability, which happens infrequently, Cerner provides at least 3 weeks' notice.

OP061

The Vendor should develop, maintain, and implement a Department-approved System Operations Plan as defined in Appendix 2 - Deliverables and Milestones Dictionary.

Cerner will develop, maintain, and implement a DHHR-approved System Operations Plan.

OP062

The Vendor should pay and arrange for an annual Statement on Standards for Attestation Engagements, System, and Organization Controls (SOC) 1, Type II audit, using the most current version of the audit, which should cover work performed by the Vendor at the Vendor's facility and data center sites.

Cerner's SOC 1 Type II attestation report provides detailed control information around our process related to hosting. This can be obtained directly from Cerner.

In place of a SOC 1 Type II attestation report, AWS Provides a SOC 2 Type II attestation report covering Security, Availability, and Confidentiality controls around the AWS's cloud offering. The AWS SOC 2 Type II attestation report can be obtained directly from AWS. The AWS SOC 2 report is available to customers by using AWS Artifact, a self-service portal for on-demand access to AWS compliance reports. Sign in to AWS Artifact in the AWS Management Console, or learn more at Getting Started with AWS Artifact.

OP063

The Vendor should submit the annual Statement on Standards for Attestation Engagements, System and Organization Controls (SOC) 1, Type II audit report, using the most current version of the audit, to the Department for approval with an action plan to remediate findings within a timeframe agreed upon by the Vendor and the Department.

Cerner's SOC 1 Type II attestation report provides detailed control information around our process related to hosting. This can be obtained directly from Cerner.

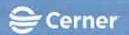
In place of a SOC 1 Type II attestation report, AWS Provides a SOC 2 Type II attestation report covering Security, Availability, and Confidentiality controls around the AWS's cloud offering. The AWS SOC 2 Type II attestation report can be obtained directly from AWS. The AWS SOC 2 report is available to customers by using AWS Artifact, a self-service portal for on-demand access to AWS compliance reports. Sign in to AWS Artifact in the AWS Management Console, or learn more at Getting Started with AWS Artifact.

Cerner understands that DHHR's business needs are ever-changing and Cerner will work with the Department to address those needs in good faith as those needs arise.

OP064

The solution should provide an authorized solution user test environment (sandbox) to test new queries and reports prior to execution in production.

The configuration and UAT environments support application user testing of releases. In addition, the Department has the option of developing reports, extracts and other content directly within the production environment but in a sandbox that is logically separated for security reasons as well as separated so that development will not impact production performance. This second option allows more users to create content with minimal overhead while still ensuring production stability.



The solution should have test environments (sandboxes) that include metadata necessary to test new queries and reports prior to execution in production.

Cerner will provide DHHR with an environment with the same hardware and metadata to perform testing prior to execution in production.

OP066

The solution should have a test environment (sandbox) that can be refreshed as requested by the Department.

Cerner will work with DHHR to refresh the environments at mutually agreed upon intervals as required by the Department.

OP067

The solution should utilize the same hardware, operating system, and relational database management in the test environments (sandboxes) that are used in production.

Cerner's environments all utilize the same hardware, operating system, and relational database management that are used in production. Our environments have the exact same look and feel as our production environments.

**OP068** 

The solution should have test environments (sandboxes) that mirror the production environment.

The configuration and UAT environments support application user testing of releases. In addition, the Department has the option of developing reports, extracts and other content directly within the production environment but in a sandbox that is logically separated for security reasons as well as separated so that development will not impact production performance. This second option allows for more users to create content with minimal overhead while still ensuring production stability. With both options, testing is based on hardware, software and configuration that mirrors the production environment.

OP069

The Vendor should develop, implement, and maintain a configuration management solution to migrate tested hardware and software to the production environment.

As a SaaS offering, all platform software has been centrally tested to ensure passivity before being released. Via the System Development Life Cycle (SDLC) process, Software is thoroughly validated as part of UNIT testing in a development box. Upon completion of UNIT testing the configured code is checked into the master repository. From the master repository, a deployable container is created by packaging all components such as code, configurations, properties etc. That deployable container is used to move code for SIT and UAT testing. If issues are uncovered at any point in testing, corrections are made in development and a new deployable container is created for SIT and UAT testing. Once all testing is complete, code is released to all clients.

Likewise, all configured content is validated via the SDLC process. Once the core platform is deployed, all content will be configured in the configuration environment and then promoted through UAT and then production. As defined in the SDLC process, required testing includes unit, SIT and UAT. The process also requires Department approval before content is promoted. Configuration management is a built-in capability of the platform to track versions and facilitate promotion. Automated processes facilitate the movement of content between environments.



The solution should supply access to the user acceptance testing (UAT) environment on the enterprise data solution (EDS) portal for authorized solution users.

The purpose of the UAT testing environment is enable UAT. Modification and validation of content occurs in the Configuration environment before promotion to the UAT testing environment. Our recommendation is for source files to be real production data in UAT to facilitate more accurate testing.

OP071

The solution should provide access to the enterprise data solution (EDS) portal test environments (sandboxes) for authorized solution users.

Authorized DHHR users will have access to the necessary environments needed to perform their specific duties. All access to Cerner's applications is controlled by client-defined role-based security settings. DHHR will have access to the environments discussed in OP064 to development and implement DHHR-specific content reports and content.

OP072

The Vendor should provide access for authorized solution users to all solution test environments as requested by the Department.

Cerner will provide DHHR with the defined environments including the configuration of the authentication and authorization system. DHHR users will be given access to each environment with the privileges to authorize other users as appropriate.

OP073

The solution should have a development environment to develop and unit-test all software contained within the solution.

Cerner ensures all platform software as well as all configured content is validated via our SDLC process. As an SaaS offering, all platform software has been centrally tested in a development environment to ensure passivity before being released. Centralized testing includes unit test, SIT and UAT. This SaaS approach allows Cerner to stand up multiple environments complete with all hardware, ETL engine, ETL templates, visualization software, prebuilt data models templates and pre-built reports templates.

Once the core platform is deployed, all content will be configured in the configuration environment and then promoted through UAT and then production. As defined in the SDLC process, required testing includes unit, SIT and UAT. The process also requires Department approval before content is promoted. Automated processes facilitate the movement of content between environments.

OP074

The solution's user acceptance testing (UAT) environment should have the ability to support all components of the solution.

Within the UAT environment, all relevant components will be supported, and we will mirror production data. This will help to ensure that necessary data components are available for UAT testing.

OP075

The solution's unit test environment should have the ability to perform full-scale system integration testing (SIT) for the solution.

Cerner will support full-scale system integration testing in the configuration environment. SIT testing will be streamlined by focusing on configured content since the core platform was previously tested to ensure integration of components within the platform works as expected.



The solution should have a unit test environment that mirrors production in hardware, software stack, and data volumes.

Cerner will support unit testing in the configuration environment. Unit testing will be streamlined by focusing on configured content since the core platform was previously tested to ensure individual components within the platform works as expected. The configuration environment has the equivalent hardware, software and data volumes.

OP077

The solution should have a unit test environment that exists for all relevant components.

This SaaS approach will provide DHHR with the same hardware and software stacked across all provided environments. All environments will include the relevant components to facilities accurate validation throughout the SDLC process. Unit testing will be streamlined by focusing on configured content since the core platform was previously tested to ensure individual components within the platform works as expected.

### 2. SOLUTION BACKUP, DISASTER RECOVERY, AND FAILOVER

Refer to the relevant maintenance and operations specifications located in *Appendix 1:* Detailed Specifications and pertinent narrative in Section 4: Project Specifications in this RFP to cover solution capabilities in this area. The Vendor should describe its approach to Solution Backup, Disaster Recovery, and Failover below (see below (1)). The narrative response for this category should be organized using the appropriate subject matter area as per Appendix 1: Detailed Specifications.

Cerner's SaaS model services hundreds of clients, each with requirements for backup, disaster recovery, and failover. As such, Cerner is invested in industry leading capabilities to ensure that our clients' mission-critical systems function without interruption. Cerner continuously drives improvements in our solution architecture to ensure best-in-class business continuity. Our hosting services are delivered by multiple data centers, each with core infrastructure services, including telecommunications, power, and in place security infrastructure. In the event of a disaster, an emergency response team will be mobilized, and an alternate data center will be invoked with the appropriate hardware (e.g., servers, storage, etc.) provisioned as quickly as possible.

In a disaster situation, Cerner will deploy available resources (within reason) to recover all systems as quickly as possible. The Department will be notified when the recovery process of production systems is complete. To protect against the potential for data and communication loss, we employ redundancies across AZs within a given region. This approach enables Cerner's platform to be inherently resilient, utilizing data stores across multiple AZs within a designated region. We proactively monitor and assess our systems and processes and improve our approach as necessary, resulting in an outstanding industry track record of outstanding uptime on production system.

DR001

The Vendor should deliver a Disaster Recovery and Business Continuity Plan to the Department for review and approval 30 business days prior to the start of solution operations.

A Disaster Recovery and Business Continuity plan will be provided to the Department 30 days prior to implementation. The delivery of this document will be available during the Solution Design, Testing, and Operations phases.



The Vendor should develop, maintain, and submit to the Department within the Disaster Recovery and Business Continuity Plan all proposed off-site procedures, locations, and protocols.

Our SaaS offering will be hosted by AWS. The off-site procedures, locations and protocols will be controlled by Cerner in partnership with AWS and will align with the SLA. Information on AZs provided by AWS can be reviewed in the AWS SOC report, which is available to the Department through AWS.

DR003

The Vendor should perform a review of the Disaster Recovery and Business Continuity Plan annually and submit to the Department for review and approval within 30 calendar days of the

Our Disaster Recovery and Business Continuity Plan is reviewed annually, and the Disaster Recovery and Business Continuity Plan will be available to the Department for review. Exercises are conducted and reviewed in conjunction with AWS.

DR004

The Vendor should submit substantive change(s) to the Disaster Recovery and Business Continuity Plan to the Department for review and approval within 30 calendar days of the proposed change(s).

Cerner proposes a cloud offering. As such, changes to the Disaster Recovery Plan will be communicated to DHHR in accordance with their SLA. Furthermore, our dedicated project team will work with the Department to include specific notification, incident reporting, and escalation processes should a catastrophic event occur. To date, Cerner has never experienced a catastrophic event or a need to invoke our Disaster Recovery process. As we are proposing a SaaS offering, changes to the Disaster Recovery and Business Continuity Plan are at the benefit of all clients we serve. We will work with the Department to implement necessary changes, but the ultimate decision on any proposed change to our Disaster Recovery and Business Continuity Plan will be at the discretion of Cerner.

DR005

The Vendor should provide the Department with up-to-date copies of the Disaster Recovery and Business Continuity Plan in electronic and printed versions annually and within 30 calendar days of when substantive changes are made.

Changes to the Disaster Recovery and Business Continuity Plan will be provided in electronic and printed copies to the Department within 30 calendar days of those changes. This is in keeping with our management of deliverable content to the Department.

DR006

The Vendor should ensure a copy of the most recent Disaster Recovery and Business Continuity Plan is available in hard copy and electronic form at an off-site location approved by the Department.

As our solution is a SaaS offering, the most recent Disaster Recovery and Business Continuity Plan will be available online. A hard copy of the Disaster Recovery and Business Continuity plan can be provided to the Department.

DR007

The Vendor should ensure that each aspect of the Disaster Recovery and Business Continuity Plan is detailed as to both Vendor and Department responsibilities.

To help ensure each aspect of the Disaster Recovery and Business Continuity Plan, we have included the below table that outlines the defined roles and responsibilities for Cerner and the Department.



Table 46 Vendor and Department Responsibilities

Role	Responsibilities
Executive leadership (Department)	Approve and provide support for the development and implementation of Cerner's business resilience program
Project manager (Cerner)	Point of contact with Cerner's project team in the case of an incident
Contract manager (Cerner)	Point of contact with Cerner's project team in the case of an incident
Project manager (Department)	Point of contact with client in the case of an incident
IRC (Cemer)	Central point of contact and coordination for all escalated critical incidents and the primary user of the incident escalation process
Amazon technical account manager (TAM)	Point of contact for support needs during disaster recovery
Cerner Business Resilience team (Cerner)	The Business Resilience team will manage, coordinate, and oversee the Business Resilience program design, development, implementation, maintenance, and assessment
Cerner Incident Response Team (IRT) (Cerner)	The incident response team is responsible for incident assessment, mitigation, prevention, monitoring, escalation and communication
Crisis Incident Management Team (Cerner)	Assists and works with the IRT for advisory and/or escalation decisions and holds responsibility for activating the Incident Management Plan

**DR008** 

The Vendor's Disaster Recovery and Business Continuity Plan should account for all input, processing, and output procedure functions.

Cerner's Disaster Recovery and Business Continuity Plan accounts for the supporting input, processing, and output procedure functions.

DR009

The Vendor should ensure that each aspect of the Disaster Recovery and Business Continuity Plan satisfies all requirements for federal and State certification.

The Disaster Recovery and Business Continuity Plan utilized by our SaaS solution meets CMS certification and federal certification. One of the benefits of our SaaS solution is that we service hundreds of clients. As such, business continuity is tightly integrated in all our essential business processes including the technology and information architectures that support them.

DR010

The Disaster Recovery and Business Continuity Plan should include a hierarchy that is approved by the Department of critical services, resources, and infrastructure to determine the order that services are restored.

The Disaster Recovery and Business Continuity Plan will be issued and maintained by Cerner for critical services, resources and infrastructure as it relates to the restore process. During the creation of this plan, Cerner will consult with DHHR to ensure we understand DHHR critical services. We offer a full-service Disaster Recovery and Business Continuity Plan. Our Incident Management process goal is to restore normal service operation as quickly as possible with minimal disruption to the Department ensuring the best achievable levels of availability and service are maintained. The Incident Management process is modeled after ITIL® best practices and includes the use of specially trained Incident ("Situation") Managers. We use a variety of tools to monitor, detect and report incidents. Ideally, this allows for incidents to be detected and resolved before they impact the Department, but escalation processes are in place to manage incidents that require more time or resources to resolve.

DR011

The Vendor should create and maintain a Disaster Recovery and Business Continuity Plan that details procedures to address events including, but not limited to:

Cerner will create and maintain a Disaster Recovery and Business Continuity Pan for the life of the contract with the Department.



### DR012 Terrorist acts

Cerner's Disaster Recovery and Business Continuity Plan meets federal certifications and works in accordance with policies set forth by Homeland Security for cyber security threats and terrorist attacks. Vigilance is one of the best ways Cerner guards against cybersecurity threats in health care, and one of the keys to our vigilance is in sharing cyber threat intelligence. Cerner is a member of the National Health Information Sharing and Analysis Center (NH-ISAC). We take a proactive stance on cybersecurity by sharing timely, actionable information on cyber threats.

NH-ISAC's mission is to enable and preserve the public trust by advancing the global health care sector's cyber and physical security protection and resilience and protecting against threats to that security. Sharing information between Cerner and NH-ISAC equips the health care industry with a new, protective suit of armor against cyber threats.

### DR013 Power disruptions or power failures

The HealtheIntent Platform infrastructure uses regions and AZs. A region is a physical location in the world where we have multiple AZs. The AZs consist of one or more discrete data centers with redundant power housed in separate facilities. These AZs provide the ability to operate production applications and databases that are more highly available, fault-tolerant, and scalable.

#### DR014 Solution failures

Data centers use clusters throughout the United States. All data centers are online and serving customers; no data center is "cold." In the case of a failure of an individual AZ or a data center, automated processes move customer data traffic away from the affected area. HealtheIntent Platform's core applications are deployed in an N+1 configuration so that in the event of either of these failure scenarios, there is sufficient capacity to enable traffic to be redirected and load-balanced to the remaining sites.

#### DR015 Significant compromise/degradation of data warehouse performance

Our SaaS solution provides software and infrastructure tuned for growth and performance to meet your data warehouse performance standards. As part of our Disaster Recovery and Business Continuity plan, an individual component like the data warehouse does not meet the criteria to initiate the Disaster Recovery and Business Continuity plan. The data warehouse will be monitored for compromise and degradation, as discussed in the Maintenance and Operations section.

#### DR016 Processing shutdowns

Cerner will ensure a highly available platform. We design our systems for both planned and unplanned shutdowns allowing automation to move affected production resources to working/live production resources without disrupting users. Cerner monitors the system 24/7 to respond to any issue.

#### DR017 Labor strife or strike

Our business agreement with AWS will accommodate for the appropriate individuals to update and maintain the system on the behalf of the Department.



DR018 Natural disasters

The Disaster Recovery and Business Continuity Plan accommodates for natural disasters. Cerner has designed the HealtheIntent Platform architecture for high availability with various levels of redundancy. The HealtheIntent Platform has the capability to distribute application instances and store data across multiple AZs within a geographic region. AZs consist of one or more discrete data centers, each with redundant power, networking, and connectivity, housed in separate facilities. The multi-AZ configuration provides sufficient capacity and redundancy to enable traffic to be load-balanced across active AZs in the event of an AZ failure.

DR019 Production site becoming unsafe or inoperable

The Disaster Recovery and Business Continuity Plan accommodates situations where the production site is unsafe or inoperable by utilizing our AZ architecture.

DR020 Hacking attempts or viruses

Cerner maintains documented information security management and risk management programs (collectively, the "Security Program") with clearly defined roles and responsibilities, policies and procedures, standards and guidelines, to protect both Cerner and client systems.

#### Computer Security Incident Response Center (CSIRC)

Cerner's Computer Security Incident Response Center (CSIRC) is the control center for security incident event management and is responsible for 24x7x365 continuous threat monitoring of Cerner's Platforms. The CSIRC team ingests and coordinates responses to international, federal, and tech industry threat intelligence information, in an effort to safeguard Cerner environments. In addition, the team leverages industry standard tools to systematically analyze logs to identify potential unauthorized activity and focus on potential threats.

#### Security Incidents

Cerner maintains a security incident management process to investigate, mitigate, and communicate system security events occurring within a Platform. Impacted clients are informed of relevant security incidents in a timely manner and advised of recommended corrective measures to be taken.

DR021 Others as defined by the Department

Cerner understands that DHHR's business needs may evolve over time and we will work with you to address those needs in good faith as needs arise.

DR022 The Vendor should ensure the Disaster Recovery Platform contains the same security safeguards to protect solution data during emergency operations as during normal business operations.

Cerner uses AWS AZs for active redundancy protection. Each zone is active and shares the same security and operational safeguards.



The Vendor should ensure access to all solution components, systems, and data, 24 hours a day, 7 days a week, 365 days a year, except for Department-approved scheduled and emergency outages.

The HealtheIntent Platform is designed for continuous operation with exception of planned or emergency outages. Most changes, such as hardware and software changes, can be deployed on a rolling schedule without impacting users. The platform uses multiple AWS AZs that distribute hosting services. Each zone's data centers include core infrastructure services, including telecommunications, power, and in-place security infrastructure to provide continual operational services.

DR024

Pursuant to the Service Level Agreements (SLAs), the Vendor should define, maintain, and adhere to a problem identification, notification, and resolution process that includes but is not limited to the identification of the problem, its impact, root cause analysis, and resolution.

As part of the Disaster Recover and Business Continuity Plan, Cerner institutes incident management process. This purpose of this process is to recover essential or critical business operations in a fast and efficient manner and provide a mechanism for management of direct recovery and resumption efforts. Cerner will conduct an impact analysis, risk assessment, summary of functions impacted, root cause analysis, resolution and will notify the appropriate individuals that the Department has specified. Cerner will provide to DHHR an incident notification report. Cerner will adhere to the SLA KPI and timeframes noted.

DR025

The Vendor should recover the solution and make it fully operational in the event of a disaster to the primary physical hosting site within 24 hours of the time of the solution failure.

Cerner's highly available platform is hosted in multiple pooled live AWS AZs. We will work collaboratively with DHHR to discuss the deployment model and fee structure which supports a 24hr RTO.

DR026

The Vendor should include in its system design the capability to switch operations from the production environment to the failover environment in the event technical problems incapacitate the production server.

The multi-AZ configuration provides sufficient capacity and redundancy to enable traffic to be load-balanced across active AZs in the event of an AZ failure. We believe the architecture of the production environment provides us with the ability to recover quickly for the majority of system failures and database related issues that have the potential for service disruption with minimal data loss.

DR027

The Vendor should maintain an operational backup power supply at both primary and alternate sites capable of supporting vital functions indefinitely or until primary power is fully restored.

Cerner uses AWS AZs for distribution of services. AZs are redundantly connected to multiple tier-1 transit providers and include onsite backup generators.

DR028

The Vendor should provide backup network connectivity at both the primary and alternate sites with the capacity to support the system and its components.

Each AZ includes redundant carrier services as well as redundant supporting internal network infrastructure.



The Vendor should identify and maintain a computer site at a separate location to be designated as the disaster recovery site to be approved by the Department.

The HealtheIntent Platform has the capability to distribute application instances and store data across multiple AZs within a geographic region. A region is a physical location in the United States with multiple AZs. AZs consist of one or more discrete data centers, each with redundant power, networking, and connectivity, housed in separate facilities. The multi- AZ configuration provides sufficient capacity and redundancy to enable traffic to be load-balanced across active AZs in the event of an AZ failure or disaster.

DR030

The Vendor should have a remote backup facility at least 50 miles away from the primary data center.

Cerner services which are leveraging AWS should be deployed across multiple AZ within a single public cloud region whenever feasible. An AWS region is made up of at least two AZs and each AZ consists of one or more physical data centers, each with redundant power, networking, and connectivity. AZs within a region are separated at a great enough distance to prevent a natural disaster from impacting multiple AZs and are connected to each other with fast, private fiber-optic networking. The use of AZs provides an easier and more effective way to design and operate applications and databases, making them more highly available, fault tolerant, and scalable than traditional single datacenter infrastructures or multi-datacenter infrastructures. The purpose of public cloud resiliency testing is to ensure services which are deployed on public cloud infrastructure are resilient to AZs interruptions or failures.

DR031

The Vendor should perform an annual review of the disaster recovery backup site, procedures for all off-site storage, and validation of security procedures and submit a report of the backup site review within 30 calendar days of the review.

Cerner conducts an annual review of the disaster recovery backup site through AWS credentials, certifications, and SOC report.

DR032

The Department reserves the right to inspect the disaster recovery backup site and procedures at any time with 24-hours' notification.

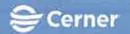
Cerner reviews disaster recovery procedures on an annual basis. Cerner conducts an annual review of the disaster recovery backup site, procedures for storage, and validation of security procedures. AWS does not allow access to their data centers.

DR033

The Vendor should execute a test of the Disaster Recovery and Business Continuity Plan as part of user acceptance testing (UAT).

Business continuity planning continuously works to identify potential incidents or failures, perform impact analysis, and mitigate risks/issues before, during, and after a disruptive incident or failure. Cerner's Business Continuity planning establishes processes for responding to, recovering from, and resuming operations after an incident. Disaster Recovery planning is designed to reduce risk by providing a strategy and a plan for the recovery and resumption of technology. Cerner supports a robust Disaster Recovery Program supporting the required availability of time-sensitive data processing functions.

Disaster Recovery and Business Continuity Plan shall be reviewed at least annually and updated as needed. Disaster Recovery and Business Continuity Plan best practice is to exercise plans and testing on an annual basis and document the results. These results will be distributed to the Department per the approved Project Work Plan.



The Vendor should exercise/test the Disaster Recovery and Business Continuity Plan annually and provide the disaster recovery testing reports to the Department within 30 calendar days of the exercise/test.

Cerner will conduct Disaster Recovery and Business Continuity Plan on an annual basis and will distribute to the Department within the 30 days from testing. The approved Project Work Plan will document the date for distribution of the test report to the Department.

DR035

The Vendor should have the ability to restore all tables utilizing the on-site backup copies to their state prior to the erroneous load within timeframes pursuant to Service Level Agreements (SLAs). This includes, but is not limited to, source system- or application-dependent errors that result in invalid data being loaded into the data warehouse.

We will work collaboratively with DHHR to discuss a deployment model and fee structure that supports 10-hour recovery of data sets and a 24 hour RTO. Models are typically discussed during contract negotiations and during DDI phases of the project.

DR036

The Vendor should develop and maintain an automated scheduling system for running the backup processes for all environments.

Cerner manages backup services suitable for all HealtheIntent Platform applications and systems. Our backup systems architecture is multi-tiered, allowing backups to be performed from a hierarchy of storage media. Data, including queries, jobs, reports, analysis results and documents, are redundantly stored on multiple devices across multiple facilities in a region. Once objects are stored, we maintain patency of availability by quickly detecting and repairing any loss of redundancy through automated internal processes.

Software and data are backed up and may be restored on readily available on-demand hardware, spread across multiple AZs. We can leverage this hardware to restore software and data to DHHR as it was before an incident. File systems are backed up regularly, using automated procedures.

The AZs are physically separated within a typical metropolitan region and are in lower risk flood plains (specific flood zone categorization varies by region). AZs consist of one or more discrete data centers, each with redundant power, networking, and connectivity, housed in separate facilities.

DR037

The Vendor should backup all data files that reside in multiple environments ensuring that any data set can be restored from the backup medium within ten (10) hours of notification that a restoration is needed.

Please refer to our response to DR036.

DR038

The Vendor should backup all databases and other data on a weekly basis and store the backups at a secure off-site location.

Please refer to our response to DR036.

DR039

The solution should have the ability to backup all data sets, files, transaction logs, documentation, program code, authorized solution user libraries of reports and queries, operating system (OS) software, databases and other items as determined by the Department.

Cerner manages backup services suitable for all HealtheIntent Platform applications and systems. Our backup systems architecture is multi-tiered, allowing backups to be performed into



a hierarchy of storage media. Data, including queries, jobs, reports, analysis results, and document, is redundantly stored on multiple devices across multiple facilities in a region. Once the objects are stored, Cerner maintains availability by quickly detecting and repairing any lost redundancy through automated processes internal to Cerner.

DR040

The Vendor should ensure that backups performed by authorized solution users of reports and queries are stored on a single shared drive in the solution.

Cerner's cloud model consists of data being stored in the database in AWS S3 storage.

Application data, such as reports and queries, are also stored in the database and accessed through web tools using the appropriate permissions. Data is replicated as described in DR036

DR041

The Vendor should store all backup copies in a Department-approved backup storage location for a minimum of five (5) years.

Data is currently stored permanently in AWS S3 storage.

DR042

The Vendor should develop and maintain a process to verify that backup and restoration processes were run appropriately, and all scheduled backup procedures have run successfully.

Cerner has designed the HealtheIntent Platform application architecture for high availability with various levels of redundancy. The HealtheIntent Platform distributes application instances and stores data across multiple AZs within a geographic region. A region is a physical location in the United States with multiple AZs which consist of one or more discrete data centers, each with redundant power, networking, and connectivity, housed in separate facilities. The multi- AZ configuration provides sufficient capacity and redundancy to enable traffic to be load-balanced across active AZs in the event of an AZ failure. We believe the architecture of the production environment provides us with the ability to recover quickly for the majority of system failures and database related issues that have the potential for service disruption with minimal data loss.

DR043

The Vendor should maintain an on-site copy of backups at the on-site facility for a period of seven (7) calendar days.

The HealtheIntent Platform is hosted in highly available AWS AZs. This modern approach does not use copies of backups in offsite locations for the use of recovery procedures. Data is kept in "live" AZs and use distributed services, data storage, and compute. Should an AZ become unavailable, another AZ would carry the load. Data is stored permanently in AWS S3 storage across multiple AZs.

DR044

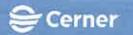
The Vendor should store weekly backups at the remote backup facility.

Cerner replicates the system daily, therefore maintaining the backups at remote location is not necessary. For further details, please refer to our response to DR036.

DR045

The Vendor should be responsible for the cost associated with the backup storage process and location.

Business continuity is included as part of the Department's subscription services.



The Vendor should provide to the Department, within 30 calendar days of request, a Turnover and Closeout Management Plan detailing the approach to transitioning systems and operational responsibilities to a successor.

Within 30 days we will provide DHHR with a Turnover and Closeout Management Plan. Because our solution is a SaaS offering, Cerner is not able to transition the system or licenses, but we will help to transition over the data to our successor.

DR047

The Vendor should transfer all backups to the successor vendor within the agreed-upon timeframe defined in the Department-approved Turnover and Closeout Management Plan.

Cerner will transfer all backup data to the successor vendor within the agreed-upon timeframe as defined in the Turnover and Closeout Management Plan. Because our solution is a SaaS offering, we are not able to transition the system or licenses.

DR048

The solution should create and retain an audit trail of all interface activity in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.

Cerner does not comply with this requirement.

DR049

The Vendor should ensure that data is retained, archived, protected from destruction, and accessible in accordance with Department, State and federal security and privacy laws, policies, and/or procedures.

The backup and restore architecture is based on short-term backups on disk and long-term backups online. This allows for two copies of the backups to be available during critical time periods, providing redundancy and data corruption protection. Full data backups are performed weekly, with incremental backups performed nightly.

In addition to regular backups, Hadoop enables built-in redundancy by storing incoming raw data in triplicate. The HealtheIntent platform stores top-record data views (i.e. at the highest organizational level) for trending purposes. Currently, the Platform retains all raw and processed data indefinitely.

From a user perspective, Cerner believes in and implements least privilege security. The user can only access data absolutely required for their role. Activity is tracked and logged with our auditing tool, P2Sentinel which includes a dashboard for monitoring and can include alerts to indicate any defined violations.

DR050

The Vendor should ensure that hard copy documents are retained, stored, imaged, archived, and destroyed in accordance with Department. State, and federal security and privacy laws, policies, and/or procedures.

Cerner does not store hard copy documents containing member information. We follow HIPAA and security best practices for the protection of data.



### ATTACHMENT K: TERMS AND CONDITIONS RESPONSE TEMPLATE

#### 1. Instructions

The Vendor should review *Attachment K: Terms and Conditions Response Template* signing each provided signature block using blue ink in order to note the Vendor's acknowledgement and intent of compliance. The Vendor should identify any exceptions to the Terms and Conditions. If exceptions are not noted in *Attachment K: Terms and Conditions Response Template* of the RFP but raised during contract negotiations, the State reserves the right to cancel the negotiation if, at its sole discretion, it deems that to be in the best interests of the State.

#### 2. RFP TERMS AND CONDITIONS

RFP Terms and Conditions consist of provisions throughout this RFP. Moreover, these provisions encapsulate instructions, State and federal procedures, and the State's expectations of the Vendor when submitting a proposal. The Vendor should understand and strictly adhere to the RFP Terms and Conditions. Failure to follow any instructions within this RFP may, at the State's sole discretion, result in the disqualification of the Vendor's proposal.

Please provide an authorized signature stipulating the Vendor's acknowledgement, understanding, and acceptance of these RFP Terms and Conditions.

Marc E. Elkins / Mour & Eller

Printed Name / Signature of Authorized Personnel

31 JANUARY 20128

Date

#### 3. STATE CUSTOMARY TERMS AND CONDITIONS

The selected Vendor will sign a contract with the State to provide the goods and services described in the Vendor's response. The following documents shall be included in any contract(s) resulting from this RFP:

Section 3: General Terms and Conditions (attached PDF file Section\_2\_Instructions\_To\_Vendors\_Submitting\_Bids\_and\_Section\_3\_General\_Terms\_and\_Conditions)

Section 7: Provisions Required For Federally Funded Procurements

Appendix 5: Service Level Agreements and Performance Standards

Appendix 8: IT Terms and Conditions

HIPAA Business Associate Agreement

Please provide a signature stipulating the Vendor's acknowledgement and complete review of these documents.



Marc E. Elkins / Marc & Ellins	31 JANUARY ZOZO
Printed Name / Signature of Authorized Personnel	Date
If the Vendor is <u>not taking exceptions</u> to any of the State Customar Vendor needs to provide a binding signature stipulating its accepta	
Printed Name / Signature of Authorized Personnel	Date

### 4. MANDATORY REQUIREMENTS AND TERMS

The following items are Mandatory Terms and Documents. Please be advised, the Vendor **should** provide its affirmative acceptance of these items in order to move forward with consideration under this RFP.

- Attachment F: Mandatory Requirements (attached Microsoft Excel<sup>®</sup> file, Attachment F Mandatory Requirements)
- In no event shall the State agree to terms that (a) require indemnification by the State of the Contractor; (b) waive the State's right to a jury trial; (c) establish applicable law anywhere other than the State of West Virginia, or jurisdiction in any venue other than the Thirteenth Judicial Circuit Court; (d) designate a governing law other than the laws of the State of West Virginia; (e) constitute an implied or deemed waiver of the immunities, defenses, rights, or actions arising out of the State's sovereign status or under the Eleventh Amendment to the United States Constitution; (f) limit the time within which an action may be brought; (g) require arbitration, (h) require the ability to defend lawsuit without the approval of the Attorney General's Office; or (i) pay attorney fees.
- HIPAA Business Associate Agreement
- Appendix 5: Service Level Agreements and Performance Standards

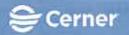
Vendors that are not able to enter into a contract under these conditions should not submit a bid.

Please provide an authorized signature stipulating the Vendor's acknowledgement, understanding, and acceptance of the Mandatory Requirements and Terms stipulated in this section.

Marc E. Elkins / Marc & Eller, Assess ser Socretion 31 James 2020

Printed Name / Signature of Authorized Personnel

Date



#### 5. COMMERCIAL MATERIALS

The Vendor should list any commercial and proprietary materials it will deliver that are easily copied, such as Commercial Software, and in which the State will have less than full ownership ("Commercial Materials"). Generally, these will be from third parties and readily available in the open market. The Vendor need not list patented parts of equipment.

Cerner will provide all software components required for the solution functionality included in the proposal that are used for the Vendor managed Software as a Service (SaaS). With the exception of state data, the Vendor will have full ownership of the software components. The SaaS Service software components are not available for "copy" outside of the Vendor managed SaaS.

#### 6. EXCEPTIONS

The Vendor should indicate exceptions to the State's Terms and Conditions in this RFP. Any exceptions should include an explanation for the Vendor's inability to comply with such term or condition and, if applicable, alternative language the Vendor would find acceptable. Rejection of the State's Terms and Conditions, in part or in whole, or without any explanation, may be cause for the State's rejection of a Vendor's Proposal. If an exception concerning the Terms and Conditions is not noted in this response template, but raised during contract negotiations, the State reserves the right to cancel the negotiation, at its sole discretion, if it deems that to be in the best interests of the State.

The terms and conditions of a Vendor's software license, maintenance support agreement, and SLA, if applicable, will be required for purposes of contract negotiations for this project. Failure to provide the applicable Vendor terms, if any, as part of the RFP response may result in rejection of the Vendor's Proposal.

Instructions: Identify and explain any exceptions to the State's terms and conditions using the tables provided below, adding tables, as needed. If no changes are listed, the Vendor is indicating that no changes to the Terms and Conditions are proposed, and that the Vendor intends to accept them as written if the Vendor's Proposal is selected. Mandatory Requirements and Terms noted in this RFP are non-negotiable.

- The Vendor may add additional tables, as appropriate.
- Do not submit Vendor's Standard Terms and Contracting Provisions in lieu of stipulating exceptions below.
- Making revisions to State statutes and regulations is prohibited.
- The State has no obligation to accept any exception(s).

As requested, we have provided our template "Cerner Business Agreement" (CBA), which indicates the general terms Cerner would normally include in a contract with a client. Cerner expects that the final contract will also include additional product and service-specific terms, including certain terms required by applicable Cerner suppliers. These product and service-specific terms are normally included in a separate Sales Order, which is entered into by the parties under the CBA. For more details, please refer to the Cerner Business Agreement and Sales Order documents following our list of exceptions in Attachment K: Terms and Conditions Response Template located in the technical proposal.



Also as requested, we have indicated below Cerner's exceptions to the state's non-mandatory Terms and Conditions contained in the RFP. Cerner is willing to add all such provisions that the parties mutually approve in the final contract.

Please be advised that there are certain Mandatory Requirements that, although we will meet in spirit, we felt it important to provide transparency to the State about our concerns regarding the applicability of all elements of the requirement to our proposed SaaS offering. Based on the State's instruction in paragraph one of this form, it is our interpretation that we should provide the State notice that we need to discuss certain elements of the requirements through an exception. So, we have included them in this form, as well.

If Cerner is selected as your supplier of choice, our representatives will be happy to begin negotiations toward a mutually acceptable contract that protects the essential interests of both parties to the transaction.

### 6.1 Exception #1 – Contractual Agreement

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
General Terms and Conditions, Section 1	Cerner expects that the parties will negotiate a mutually acceptable final contract to reflect the transaction. Cerner does not agree that the final contract will be formed merely by the state's acceptance of Cerner's bid.	N/A
NOTES/COMMENTS: <f< td=""><td>OR STATE USE ONLY&gt;</td><td></td></f<>	OR STATE USE ONLY>	

# 6.2 Exception #2 – Required Documents

Document Title (Reference Specific	ence Specific Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable)
and Section in Which Exception is Taken)		Cross-Reference to specific section of Vendor's Terms, If Any



		Provided As Part of the RFP Response
General Terms and Conditions, Section 7	Cerner would like to discuss with the state the applicability of the certifications included in this Section:	N/A
	Certified Information Security     Professional (CISSP) or	
	Certified Information Systems Auditor (CISA)	
NOTES/COMMENTS: <f< td=""><td>OR STATE USE ONLY&gt;</td><td></td></f<>	OR STATE USE ONLY>	

# 6.3 Exception #3 - Insurance

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
General Terms and Conditions, Section 8	Workers compensation insurance is for the benefit of Cerner associates. Adding clients as additional insured is not permitted on the policy. Policies are not typically finalized 30 days prior to renewal and our carriers will not issue certificates until all negotiation is complete and the renewal is final. Typically, certificates of renewal are usually sent within a week to ten days of the policy renewal date.	The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below and must include the State as an additional insured on each policy, except for Workers Compensation, prior to Contract award. The insurance coverage identified below must be maintained throughout the life of this contract. Within t∓hirty (30) days of prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herin has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or change in



	insurers. The apparent successful Vendor shall also furnish proof or any additional insurance requirements contained in the specifications prior to Contract award regardless of whether or rethat insurance requirement is listed in this section.	
NOTES/COMMENTS: <for onl<="" state="" th="" use=""><td>Y&gt;</td></for>	Y>	

# 6.4 Exception #4 - Additional Fees

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
General Terms and Conditions, Section 17	Cerner would like to discuss this Section with the state to understand how the prohibition on additional fees would be expected to apply to a multi-year vendor-client relationship such as we are contemplating.	N/A
NOTES/COMMENTS: <f< th=""><th>OR STATE USE ONLY&gt;</th><th></th></f<>	OR STATE USE ONLY>	

# 6.5 Exception #5 – Funding

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any
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		Provided As Part of the RFP Response
General Terms and Conditions, Section 18	Cerner would like to revise this Section to include a requirement that the state must use good faith efforts to secure funding for the contract, and in the event the contract is terminated for lack of funding, must pay for all services provided up to the date of the termination.	N/A
NOTES/COMMENTS: <fo< td=""><td>PR STATE USE ONLY&gt;</td><td></td></fo<>	PR STATE USE ONLY>	

# 6.6 Exception #6 - Cancellation

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (II Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
General Terms and Conditions, Section 19	Cerner would like to discuss with the state the financial ramifications and parameters around a contractual termination for convenience.	N/A
NOTES/COMMENTS: <fc< td=""><td>OR STATE USE ONLY&gt;</td><td></td></fc<>	OR STATE USE ONLY>	

# 6.7 Exception #7 – Warranty

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable)
		Cross-Reference to specific section of Vendor's Terms, If Any



		Provided As Part of the RFP Response
General Terms and Conditions, Section 28	Cerner would like to discuss with the state to include "materiality" limitations.	N/A
NOTES/COMMENTS: <	FOR STATE USE ONLY>	

# 6.8 Exception #8 – Background Check

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
General IT Terms and Conditions, Section 41	For Cerner associates employed after 2003, Cerner conducts a background check on all such persons and reviews the results of the background check for each person to verify that the person meets Cerner's standards for employment. The background check Cerner performs includes: verification of the person's Social Security Number; confirmation that the person is not listed in the OIG or GSA databases as an excluded or sanctioned individual; confirmation that the person is not listed as a terrorist or suspected terrorist on any reputable list, if such list was applicable at the time of hire; verification of any criminal records check dating back 7 years based on the Social Security Number trace at the time of hire. Cerner will carefully screen, select, hire and place employees in accordance with this section and in accordance with applicable federal, state and local laws and governmental agency guidance(s).	N/A



NOTES/COMMENTS: <FOR STATE USE ONLY>

### 6.9 Exception #9 - §200.326

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (I Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
Provisions Required for Federally Funded Procurements, Section 3	Cerner would like to discuss with the state the financial ramifications and parameters around a contractual termination for convenience.	
NOTES/COMMENTS: <fc< td=""><td></td><td></td></fc<>		

# 6.10 Exception #10 - Confidentiality

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
IT Terms and Conditions, Section 1	Cerner generally does not agree to requirements that Cerner personnel sign individual confidentiality agreements with the state. Cerner expects the confidentiality obligations to be handled at the state-Cerner level. Cerner does not agree that special or consequential damages should be specifically included for confidentiality breaches.	N/A



Upon hire, Cerner employees sign an **Employment Agreement in which they** agree not to disclose or use confidential information except for within the course of their Cerner duties and in accordance with Cerner policies. Confidential information includes information about Cerner clients, suppliers and solutions. Our Global Code of Conduct also includes confidentiality protections by which our employees are expected to comply. Please refer to our response to 6.9 Exception #9 – §200.326, Section 3 **Provisions Required for Federally** Funded Procurements for more details regarding employee background checks.

NOTES/COMMENTS: <FOR STATE USE ONLY>

# 6.11 Exception #11 – Intellectual Property

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
IT Terms and Conditions, Section 2	As a commercial software vendor, Cerner does not grant ownership rights in its software products, or any customizations or modifications thereof, to its clients. Cerner would not view any work under the contract as "work for hire." For our standard provision on intellectual property, please refer to the 6.7 Section in the Cerner Business Agreement document in the Attachment K: Terms and Conditions Response Template located in the technical proposal. Cerner	N/A



	will work with the state to ensure compliance with 45 CFR 95.617 as it applies to the SaaS offering being proposed by Cerner.	
NOTES/COMMENTS: <	FOR STATE USE ONLY>	

# 6.12 Exception #12 - License

Cerner will work with the state to consolidate the state's licensing terms with the standard Cerner terms. For our standard provisions on licensing of our software, please refer to the 1.1 Section in Cerner Business Agreement document in Attachment K: Terms and Conditions Response Template located in the technical proposal.	Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
		consolidate the state's licensing terms with the standard Cerner terms. For our standard provisions on licensing of our software, please refer to the 1.1 Section in Cerner Business Agreement document in Attachment K: Terms and Conditions Response Template located in the	N/A

# 6.13 Exception #13 - Software Warranty

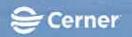
Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any
		Provided As Part of the RFP Response



T Terms and Conditions, Section 3.2	Cerner would like to discuss with the state consolidating the state's software warranty terms with the standard Cerner terms. For our standard provision on warranty of our software, please refer to the 5.1 Section in the Cerner Business Agreement document in Attachment K: Terms and Conditions Response Template located in the technical proposal.	

# 6.14 Exception #14 - Software Maintenance

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
IT Terms and Conditions, Section 3.3	Cerner would like to discuss with the state consolidating the state's support and maintenance terms with the standard Cerner terms. For our standard provision on support and maintenance of our software, please refer to the 2.2 Section and Exhibit A in the Cerner Business Agreement document in Attachment K: Terms and Conditions Response Template located in the technical proposal.	N/A
NOTES/COMMENTS: <f< td=""><td>OR STATE USE ONLY&gt;</td><td></td></f<>	OR STATE USE ONLY>	

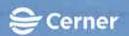


# 6.15 Exception #15 - Most Favored Nation

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
Attachment A: Cost Workbook	We note the "most favored nation" statement in the cost form regarding support fees. In general Cerner does not include these types of clauses in its contracts, because their inherent subjectivity makes them very difficult to monitor and enforce among its many client contracts and solutions.	
NOTES/COMMENTS: <f< td=""><td>OR STATE USE ONLY&gt;</td><td></td></f<>	OR STATE USE ONLY>	

# 6.16 Exception #16 - SLA-003

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
Appendix I: Detailed Specifications, OP060 and Appendix 5: Service Level Agreements (SLAs) and Performance Standards, Section 4. Operations Performance	Cerner understands the importance of system availability and the need to minimize any negative impact to users. As a SaaS platform, Cerner performs refresh and maintenance activity across the system as a whole; thus, we are not always able to comply to specific client requests. If we do have an update that impacts availability, which happens	N/A



Standards, SLA-003: Solution Availability, Performance Standards 9 and 10	infrequently, Cerner provides at least three (3) weeks' notice.	
NOTES/COMMENTS: <f< td=""><td>OR STATE USE ONLY&gt;</td><td></td></f<>	OR STATE USE ONLY>	

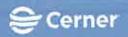
# 6.17 Exception #17 - Service Level Agreements and Performance Standards

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
Appendix 5: Service Level Agreements (SLAs) and Performance Standards and Attachment F: Mandatory Requirements, MR016	Cerner believes that Service Level Agreements are an important and necessary tool States must use to hold Vendors accountable for meeting their needs and agreed upon performance standards. We fully expect that the State will apply SLAs and associated KPIs to Cerner. That said, we do require an opportunity to discuss the State's desired SLA's and KPIs with the State prior to agreement to ensure our full and complete understanding and applicability to our proposed offering. Therefore, we agree to be held to and bound by those SLAs and KPIs as defined in Appendix 5: Service Level Agreements and Performance Standards that our parties mutually agree apply to the SaaS solution we are proposing.	
NOTES/COMMENTS: <f< td=""><td>OR STATE USE ONLY&gt;</td><td></td></f<>	OR STATE USE ONLY>	



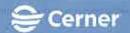
# 6.18 Exception #18 - State Policies

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
	Cerner is proposing a SaaS offering. As such, Cerner has comprehensive security and privacy policies and procedures, as outlined at www.cerner.com/security, to meet the security and privacy needs of all of our clients. We look forward to discussing during contract negotiations how our foundational policies maintain a secure, consistent environment that align with the State's goals. Our policies are based on guidance from HIPAA, NIST 800-53, NIST CSF and ISO® 27001 standards and frameworks, and an overview is available at Cerner.com/Security. Additionally, the State may view Cerner's security policies and procedures, excluding any that may risk Cerner's ability to main the privacy and security of the environment if released, as determined by Cerner in its sole but reasonable discretion.  We reserve the right to discuss the details of the individual State policies that, in our review and interpretation, do not apply to our SaaS delivery model and are not applicable.	



# 6.19 Exception #19 - Right of Access

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided as Part of the RFP Response
Attachment F: Mandatory Requirements, MR008, MR014, and MR056	Cerner's Healthelntent Platform supports a SaaS software delivery model in which software is managed and licensed by Cerner on a pay-for-use basis, centrally hosted, on-demand, and common to all clients. Cerner provides the technology infrastructure, core network, servers, storage, and resources to support the entire Platform. This includes everything from the costs and procurement of sublicensed software, hardware, storage, and internal networking to the ongoing responsibility of ensuring all applications continue to meet the infrastructure requirements Cerner's clients require.  Cerner's Healthelntent Platform (technology infrastructure) is located within an AWS data center, using infrastructure as a service (laaS). AWS data centers provide on-demand delivery of compute power, database storage, applications, and other IT resources via the internet to operate Cerner-hosted systems. Since Cerner uses both a SaaS and laaS in our delivery model, we provide a combination of physical and virtual access to appropriate system applications specific to the Department's requirements.	



Additionally, we share access to the portion of the solution used for customization, those elements (including source code) that become subject to regulation at 45 CFR section 95.617 regarding state and federal ownership and royalty-free licensing (The requirement for a royalty-free, non-exclusive and irrevocable license to software referenced in 45CFR § 95.617(b) which applies only to the software related to the customization and configuration of a COTS product for state use and does not apply to the core product.)

The Department will have access to: (i) the Department's Confidential Information; (ii) the Department's intellectual property; (iii) the Department's owned or leased Equipment (iv) the Deliverables: (v) the Module "look and feel" (to the extent such "look and feel" is original to the Module) and product specifications of the Department: (vi) all Department documents and/or policies included in the Module: and (vii) all Data input and/or stored by Users on the Module.

NOTES/COMMENTS: <FOR STATE USE ONLY>

### 6.20 Exception #20 - Responsibility

Document Title
(Reference Specific
Contractual Document
and Section in Which
Exception is Taken)

Vendor's Explanation (Required for Any Rejection/Exception)

Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any



		Provided As Part of the RFP Response
Attachment F: Mandatory Requirements, MR037	Cerner will be responsible for our team on this project, and for choosing appropriate third parties to assist in the project, and for managing such third parties. Cerner will be responsible for subcontractors to which Cerner delegates Cerner project tasks. Certain existing Cerner suppliers customarily take on direct legal responsibility for their proprietary technology and related services via pass-through terms that are included within the Cerner-client contract. Cerner will work with DHHR to address any issues concerning Cerner suppliers, including any issues regarding any such pass-through terms.	
NOTES/COMMENTS	: <for only="" state="" use=""></for>	

# 6.21 Exception #21 - Corrective Action

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (I Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
Attachment F: Mandatory Requirements, MR038	Cerner agrees to take commercially reasonable and mutually agreed-upon corrective action. Cerner will not unreasonably delay its approval of desired corrective actions.	
NOTES/COMMENTS: <f< td=""><td>OR STATE USE ONLY&gt;</td><td></td></f<>	OR STATE USE ONLY>	



# 5.22 Exception #22 - Approval of Vendor Staff

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
Attachment F: Mandatory Requirements, MR032	Cerner reserves the right to hire the individuals it feels best suited to serve the needs of its business. That said, we understand the importance of hiring staff that our clients feel comfortable with and that meet their needs. Cerner assures the competency and eligibility of its employees, agents, and contractors providing Services under this contract. Additionally, Cerner will maintain staffing levels and continuity consistent with its obligation to perform the Services under this contract.	
NOTES/COMMENTS: <fg< td=""><td>OR STATE USE ONLY&gt;</td><td></td></fg<>	OR STATE USE ONLY>	

# 6.23 Exception #23 - Federal Tax Information and Other Personal Data

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
Attachment F: Mandatory Requirements, MR004, MR005, MR006, MR039	Cerner does not anticipate receiving FTI pursuant to the State's response to question Q189 submitted as part of this RFP. In the event Cerner is required to receive FTI data, Cerner agrees to work in good faith with the state using commercially reasonable efforts to	



achieve compliance with the applicable IRS publication 1075 requirements. Cerner agrees to host and maintain your Enterprise Data Solution (EDS) at a site within the continental United States. All hosting sites adhere to current industry best practices. Cerner has technical safeguards in place to limit access to PHI, PII, FTI, and SSA data, along with security policies prohibiting Cerner associates from inappropriately accessing, editing or sharing any such data. Access to such data may be required for appropriate reasons such as managing and supporting the proposed SaaS solution.

NOTES/COMMENTS: <FOR STATE USE ONLY>

# 6.24 Exception #24 – Software as a Service (SaaS) Offering

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
Attachment F: Mandatory Requirements, MR028, MR029, MR050, and MR063	Certain requirements require Vendors to give rights, access, etc. to various elements of its SaaS offering that are not commensurate with CMS guidance as issued in CMS's State Medicaid Director Letter (Mechanized Claims Processing and Information Retrieval Systems-Enhanced Funding. (2020, January 16). Retrieved January 29, 2020, from https://www.medicaid.gov/sites/default/fil es/federal-policy-guidance/downloads/SMD16004.pdf).	



	We reserve the right to discuss these requirements in further detail to ensure alignment to a SaaS offering.	
NOTES/COMMENTS	S: <for only="" state="" use=""></for>	

# 6.25 Exception #25 – Vendor Employees are Not State Employees

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
Attachment F: Mandatory Requirements, MR040	Cerner assures the competency and eligibility of its employees, agents, and contractors providing Services under this contract. All employees are required to enter into a binding employment agreement with Cerner that includes adhering to all applicable laws and regulations and Cerner policies. Cerner maintains policies which include the proper handling of confidential information. Cerner takes responsibility for the actions of its associates acting on its behalf in execution of this contract and, thus, is unable to allow its associates to sign agreements directly with its clients.	
NOTES/COMMENTS: <fo< td=""><td>OR STATE USE ONLY&gt;</td><td></td></fo<>	OR STATE USE ONLY>	



# 6.26 Exception #26 - Security Monitoring at Solution Level

Document Title (Reference Specific Contractual Document and Section in Which Exception is Taken)	Vendor's Explanation (Required for Any Rejection/Exception)	Vendor's Proposed Alternative Language (If Applicable) Cross-Reference to specific section of Vendor's Terms, If Any Provided As Part of the RFP Response
Attachment F: Mandatory Requirements, MR055	Cerner believes some of the described Security Requirements contained in the Business and Technical Requirements Appendix 1: Detailed Specifications of the RFP may not apply to the SaaS delivery model being proposed and are better defined and managed by State or Department policy.	
NOTES/COMMENTS: <f< td=""><td>OR STATE USE ONLY&gt;</td><td></td></f<>	OR STATE USE ONLY>	





This Cerner Business Agreement (the "Agreement") is made of	n	, 2020 ("Effective Date"), between
West Virginia Department of Health & Human	and	Cerner State & Local Government Services

West Virginia Department of Health & Human Resources Bureau ("Client")

Cerner State & Local Government Services, Inc. ("Cerner")

One Davis Square, Suite 100 East Charleston, WV 25301-1729, USA Telephone: (304) 558-0684 2800 Rockcreek Parkway Kansas City, MO 64117, U.S.A. Telephone: (816) 221-1024

Client wishes to implement a System pursuant to the terms and conditions of this Agreement. Cerner agrees to provide and assist in implementing certain Licensed Software, Sublicensed Software and Equipment. This Agreement will cover all of the licenses, solutions, hardware and services provided by Cerner to Client, and consists of the following documents:

- Basic Terms and Conditions
- Exhibit A Support Services
- Exhibit B Business Associate Provisions

Cerner and Client may execute additional Ordering Documents for any additional licenses, solutions, hardware, and services in the future, which will be subject to the terms and conditions of this Agreement. Each capitalized term used in the Agreement has the meaning set forth in Section 7 of the Basic Terms and Conditions.

WEST VIRGINIA DEPARTMENT OF HEALTH & HUMAN . RESOURCES BUREAU		CERNER STA	
Ву:	(signature)	Ву:	
Title:	(type or print)	Title:	

CERNER STATE & LOCAL GOVERNMENT SERVICES INC.		
Ву:		
	Teresa Waller	
Title:	Senior Director, Contract Management	

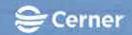


West Virginia Department of Health & Huma

Cerner Confidential Information

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#### **BASIC TERMS AND CONDITIONS**

#### 1. LICENSED SOFTWARE

1.1 Cerner grants to Client a non-exclusive, non-transferable license to use the Licensed Software, subject to the terms of this Agreement and the applicable Ordering Document. Client represents that it has the authority to bind each User and Permitted Facility to the confidentiality and use restrictions set forth in this Agreement. The Licensed Software is proprietary to Cerner, is based upon and contains trade secrets and other Confidential Information. No right to use, print, copy, modify, create derivative works of, adapt, translate, distribute, disclose, decompile or reverse engineer the Licensed Software is granted, except as expressly set forth in this Agreement. Cerner reserves title to the Licensed Software and all rights not expressly granted hereunder. Client will not outsource its operation of the Licensed Software to any third party without Cerner's prior written consent.

#### 2. SERVICES

- 2.1 Services. Cerner agrees to provide the Services set forth in each Ordering Document. Cerner uses a shared computing utility to deliver certain Services. Cerner may leverage a public cloud infrastructure to provide the Services.
- 2.2 Support. Cerner will provide the Support services set forth in Exhibit A. Client agrees to provide a single, centralized help desk for Support requests to Cerner. Unless Cerner is providing the applicable hosting services, Client will purchase any hardware and third-party software required to run New Releases. Upon request, Cerner will assist with the installation of New Releases at Cerner's then-current rates. Cerner is not obligated to provide Support for Licensed Software that is not the most current or next to most current New Release.
- 2.3 <u>Data Security</u>. Cerner has implemented reasonable security measures, systems, and procedures designed to protect against anticipated threats or hazards to the security or integrity of Client's Confidential Information. Cerner agrees to undergo an annual SSAE-18 review (or industry equivalent) of its data center operations. Upon request by Client, Cerner will provide a copy of the most recent service auditor's report.
- 2.4 <u>Client Responsibilities</u>. Client will use reasonable efforts to ensure that its Users do not (i) sell, resell, lease, lend, or otherwise make available the Services in whole or in part to a third party; (ii) modify, adapt, translate, or make derivative works of the Services; (iii) transmit any viruses or programming routines intended to damage, surreptitiously intercept, or expropriate any system, data, or personal information; or (iv) sublicense or operate the Services for timesharing, rental, outsourcing, or service bureau operations, or to train persons other than its Users. Client will manage and maintain communications, connections, and devices for its Users at all locations. Client will also: (a) credential all Users and determine the correct privileges for each User, (b) use reasonable efforts to ensure that all Users use the Services in accordance with the Documentation and for no other purpose, and (c) be responsible for any activities that occur under the Client's or Users' accounts or passwords. Client will use reasonable efforts to prevent unauthorized use of the Services, and to terminate any unauthorized use. Client will promptly notify Cerner of any unauthorized use of, or access to, the Services of which it becomes aware. Client agrees to provide information requested by Cerner to verify Client's compliance with this Agreement. Client is also responsible for its security and privacy compliance, including obtaining consents and authorizations where necessary, and implementing reasonable security capabilities and policies and procedures to minimize or prevent unlawful access by Client or its Users, and access by unauthorized persons.
- 2.5 <u>Suspension of Services</u>. If (i) there is any threat to the security of Cerner's systems or the Services, or (ii) Client's undisputed invoices are 60 days or more overdue, in addition to any other rights and remedies (including termination rights), Cerner may, upon notice to Client, suspend the Services without liability to Client until all issues are resolved to Cerner's reasonable satisfaction.

### 3. THIRD-PARTY SOFTWARE, SERVICES, AND EQUIPMENT

3.1 Pass-Through Provisions. Sublicensed Software, Third-Party Services and Equipment will be provided under the applicable terms of the third-party supplier. The Ordering Document will identify applicable pass-through terms which will be available on Cerner's website (https://passthroughprovisions.cerner.com/). Unless otherwise set forth in the



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applicable pass-through provisions, Cerner grants to Client a non-exclusive, non-transferable sublicense to use the Sublicensed Software on the terms for end users in the license granted to Cerner by the applicable Sublicensed Software supplier.

3.2 Equipment. The Equipment is priced FOB the supplier's point of origin. Cerner will arrange, pre-pay, and invoice Client for shipping and in-transit insurance for the Equipment. If Client has agreed in writing to a shipment date, Client agrees to pay all cancellation, re-stocking, storage and additional transportation fees due to the return or re-routing of Equipment. Cerner retains a security interest in each item of Equipment until Client pays for the Equipment.

#### 4. PAYMENTS

- 4.1 Payment. Client will pay all invoices within thirty (30) days after receipt. Client will pay a finance charge on all undisputed amounts that are more than sixty (60) days past due at a rate of interest equal to the lesser of 1.5% per month or the maximum permissible legal rate. Client will reimburse Cerner for reasonable collection costs, including attorneys' fees, for past due amounts.
- 4.2 Taxes. Client will pay all taxes imposed in conjunction with this Agreement, including, but not limited to, sales, use, excise, and similar taxes based on or measured by charges payable under this Agreement and imposed under authority of federal, state, or local taxing jurisdictions, but excluding foreign, federal, state, and local taxes on Cerner's net income or corporate existence. If tax exempt, Client will provide Cerner a copy of its sales tax exemption certificate.
- 4.3 <u>Reimbursable Expenses</u>. Client agrees to reimburse Cerner for the following travel expenses incurred by Cerner in its performance of Services: (a) air travel, not to exceed the coach class rate; (b) auto rentals; (c) lodging and miscellaneous expenses, such as parking, taxi fares, and fuel; and (d) a per diem rate for meals, as published and updated by the U.S. General Services Administration.
- 4.4 Assignment of Payments. Client agrees that Cerner may assign its interest in or otherwise grant a security interest in payments due pursuant to this Agreement in whole or in part to an assignee. Client will promptly acknowledge each assignment or granting of a security interest. Cerner will continue to perform its obligations under this Agreement following an assignment of payments or granting of a security interest.

### 5. WARRANTY, INDEMNITY, AND LIABILITY LIMITATION

- 5.1 Functionality Warranty. Cerner warrants that, as long as Client (a) remains continuously on Support and (b) is operating the most current or next to most current New Release, the Licensed Software will, without Material Error, perform the functions implemented by Client set forth in the Solution Descriptions when operated in accordance with the Documentation. In the event of a breach of this warranty, Cerner will repair or replace the failing item of Licensed Software so that it performs in accordance with such warranty. If, after repeated efforts (not to exceed 6 months from the date Cerner receives written notice of the warranty breach), Cerner is unable to repair or replace the failing item of Licensed Software so that it performs in accordance with such warranty, Client may, at Cerner's expense, return the failing item of Licensed Software and receive a refund of the item's license fee (calculated on a 5-year straight line depreciated basis), as well as the item's Support fees paid since the failure was first reported to Cerner. CLIENT'S RIGHTS UNDER THIS SECTION CONSTITUTE ITS SOLE AND EXCLUSIVE REMEDY AND CERNER'S SOLE AND EXCLUSIVE OBLIGATIONS WITH RESPECT TO ANY BREACH OF THIS WARRANTY.
- 5.2 <u>Services Warranty</u>. Cerner warrants that it will perform the Cerner Services in a professional manner in accordance with the applicable Solution Description.
- 5.3 Discialmer of All Other Warranties. Cerner makes no representations or warranties concerning the Equipment, Sublicensed Software or Third-Party Services. THE FOREGOING WARRANTIES ARE IN LIEU OF, AND CERNER DISCLAIMS, ALL OTHER WARRANTIES, BOTH EXPRESS AND IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, ANY WARRANTY ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICE AND ANY IMPLIED WARRANTY OF NON-INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS. CERNER DOES NOT WARRANT THAT THE SERVICES WILL BE ERROR-FREE OR UNINTERRUPTED, THAT ALL DEFECTS WILL BE CORRECTED, OR WILL MEET CLIENT'S REQUIREMENTS. CERNER DOES NOT WARRANT THAT ANY ALERTS OR OTHER INFORMATION PROVIDED THROUGH THE SERVICES HAVE THE ABILITY TO IMPROVE THE HEALTH STATUS



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OF A PATIENT OR SAVE PATIENT LIVES. THE SERVICES AND CONTENT ARE PROVIDED ON AN AS-IS AND AS-AVAILABLE BASIS AND ARE SUBJECT TO TIME DELAYS.

- Cerner Indemnity. Cerner will defend, indemnify, and hold Client and its officers, directors, employees, and agents harmless from and against third-party claims, liabilities, obligations, judgments, and causes of actions ("Third-Party Claims") and associated costs and expenses (including reasonable attorneys' fees) to the extent arising out of (a) Cerner's negligence or willful misconduct in providing the Cerner Services, or (b) an allegation that the Licensed Software or Cerner Services infringe a third party's U.S. patent, trademark, or copyright. Cerner's indemnification obligation will not apply to the extent that the Third-Party Claim is based upon: (i) the use of any item of Licensed Software or Cerner Services in combination with any product, service or activity (or any part thereof) not furnished, performed or recommended in writing by Cerner, or (ii) the use of Licensed Software or Cerner Services in violation of this Agreement; (iii) the use of Licensed Software not updated to the latest version offered by Cerner, where the latest version incorporates modifications that, in Cerner's opinion, avoid the infringement claim; or (iv) third-party content supplied or transmitted by Client or Users. If there is a Third-Party Claim relating to Client's use of the Licensed Software or Cerner Services due to an infringement, or if, in Cerner's opinion, any of the Licensed Software or Cerner Services are likely to become the subject of a Third-Party Claim of infringement, Cerner will at its option and expense, and as Client's sole and exclusive remedy, use reasonable efforts to procure the right for Client to use the Licensed Software or Cerner Services that are the subject of the infringement Third-Party Claim, replace or modify the Licensed Software or Cerner Services so that they become non-infringing, or terminate the Licensed Software or Cerner Services and provide Client with a refund of the item's license fee (calculated on a 5-year straight line depreciated basis) and any prepaid amounts for Cerner Servic
- 5.5 Client Indemnity. Client will defend, indemnify, and hold Cerner and its officers, directors, employees, and agents harmless from and against Third-Party Claims and associated costs and expenses (including reasonable attorneys' fees) arising out of the use of the System or Services by Client; provided however, that the foregoing indemnity will not apply to the extent Client has used the System and Services in accordance with the Documentation and applicable standards of good clinical practice and the proximate and direct cause of the Third-Party Claim is Cerner's negligence or willful misconduct in providing the Licensed Software or Cerner Services.
- 5.6 Indemnification Process. To be indemnified, the party seeking indemnification must: (i) give the other party timely written notice of the Third-Party Claim (unless the other party already has notice of the Third-Party Claim); (ii) give the indemnifying party authority, information, and assistance for the Third-Party Claim's defense and settlement; and (iii) not materially prejudice the indemnifying party's ability to satisfactorily defend or settle the Third-Party Claim. The indemnifying party has the right, at its option, to defend the Third-Party Claim at its own expense and with its own counsel. The indemnifying party has the right to settle the claim without the indemnified party's consent so long as the settlement does not require the indemnified party to pay any money or admit fault. The indemnified party will have the right, at its option, to participate in the defense of the Third-Party Claim, with its own counsel and at its own expense, but the indemnifying party will retain control of the Third-Party Claim's defense.
- 5.7 Limitation of Liability. EXCEPT FOR INDEMNIFICATION OBLIGATIONS, PAYMENT OF FEES DUE UNDER THIS AGREEMENT, AND FOR CLIENT'S BREACH OF SECTION 1.1, NEITHER PARTY IS LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES BASED UPON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR ANY OTHER LEGAL THEORY. THE EXCLUDED DAMAGES INCLUDE, BUT ARE NOT LIMITED TO, LOSS OF PROFITS; LOSS OF SAVINGS OR REVENUE; LOSS OF USE OF THE EQUIPMENT, SUBLICENSED SOFTWARE, LICENSED SOFTWARE, SERVICES, OR DATA; COST OF CAPITAL; COST OF ANY SUBSTITUTE EQUIPMENT, FACILITIES OR SERVICES; THIRD PARTY CONSEQUENTIAL DAMAGES; AND INJURY TO PROPERTY. Cerner is not liable for any damages of any kind or nature related to or arising from the Sublicensed Software, Equipment, or Third-Party Services. Any liability limitations set forth in the third-party pass-through provisions state the maximum liability of the applicable supplier with respect to that product or service. Notwithstanding any other provision herein, Cemer's maximum liability for any claim or series of related claims arising under this Agreement is limited to the amount paid by Client to Cerner for the affected solution or Cerner Services during the 12 months preceding the event giving rise to the claim.
- 5.8 Force Majeure. Except for obligations to pay for Services performed and products delivered, neither party will be responsible for failing to perform due to causes beyond its reasonable control, including, but not limited to, failures by Cerner's suppliers or subcontractors, war, sabotage, riots, civil disobedience, acts of governments and government agencies, labor disputes, accidents, fires, acts of terrorism, or natural disasters. The delayed party will perform its



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obligations within a reasonable time after the cause of the failure has been remedied, and the other party will accept the delayed performance.

5.9 <u>Limitation on Actions.</u> Neither party may bring any action arising out of any transaction (other than failures to pay) under this Agreement more than one year after the cause of action accrues.

#### 6. **GENERAL PROVISIONS**

- 6.1 <u>Termination of Services</u>. Client may not terminate Support before the end of twelve (12) months after First Productive Use of the applicable Licensed Software, after which time it may terminate Support for an item of Licensed Software upon 365 days' prior written notice to Cerner. If Client terminates Support and later elects to re-start Support, Client will pay a catch-up payment equal to the amount of Support fees that would have been due during the suspension period. Cerner may not terminate Support for an item of Licensed Software for a period of 2 years after First Productive Use of such item; however, Cerner may suspend Support or other services if Client (a) fails to pay invoices, (b) attempts to modify the Licensed Software, or (c) creates and uses programs that write to Cerner databases.
- 6.2 <u>TermInation of the Agreement.</u> This Agreement remains effective until all Services expire or are terminated in accordance with this Agreement.
  - A. <u>Termination of Agreement</u>. Either party may terminate this Agreement if the other party materially breaches this Agreement by sending a notice specifying each breach with reasonable detail and this Agreement will be terminated, unless (i) the breaching party cures the breach within 30 days following receipt of the notice, or (ii) with respect to a breach which may not reasonably be cured within a 30-day period, the breaching party commences, is diligently pursuing cure of, and cures the breach as soon as practical.
  - B. <u>Termination of Ordering Documents</u>. Either party may terminate an Ordering Document if the other party materially breaches any provision of the Ordering Document (including any terms of this Agreement applicable to the Ordering Document) so long as the terminating party sends a notice of termination to the other party specifying each breach. The applicable Ordering Document (and any associated Services) will be terminated 30 days following delivery of the notice unless the breach is cured within the 30-day period.
  - C. <u>Transition and Termination</u>. If this Agreement expires or either party has a right to terminate this Agreement, Cerner will, upon request by Client, provide reasonable assistance on a time-and-materials basis for up to 24 months after notice of termination to allow Client to transfer to another vendor. Upon termination, Client will pay for all Services provided up to the date of termination and all other amounts owed under this Agreement including, but not limited to, fees due for the remaining contracted term (or renewal term) for the applicable Services. In addition, Client will immediately cease all use of the Licensed Software, Sublicensed Software and Services, and each party will promptly destroy all copies of the other party's Confidential Information.
- 6.3 Arbitration and Injunctive Relief. Cerner and Client will work cooperatively to resolve any dispute arising out of or relating to this Agreement (including claims relating to the negotiations and the inducement to enter into the Agreement) ("Dispute") arricably at appropriate management levels. If a Dispute remains unresolved and a party wishes to escalate to a formal dispute resolution forum, the party will submit the Dispute to binding arbitration at a site in the Kansas City, Missouri metropolitan area under the Federal Arbitration Act ("FAA") and under the then-current Commercial Arbitration Rules of the American Arbitration Association, Inc. ("AAA"). The arbitrator(s) will follow the Federal Rules of Evidence. The provisions of this Agreement will control over both the rules and procedures of the FAA, AAA, and Federal Rules of Evidence. No arbitration proceeding will include class action arbitration. The parties will share equally in the fees and expenses of the arbitrator(s) and the cost of the facilities used for the arbitration hearing, but will otherwise bear their respective fees, expenses, and costs incurred in connection with the arbitration. Judgment on any arbitration award, including damages, may be entered and enforced in any U.S. court having jurisdiction. Each party acknowledges that any breach of its obligations with respect to the other party's intellectual property rights will result in an irreparable injury for which money damages will not be an adequate remedy and that the non-breaching party is entitled to injunctive relief in addition to any other relief a court may deem proper.
- 6.4 <u>Availability of Records.</u> Until 4 years after the furnishing of services hereunder, Cerner will make available to the Secretary of the Department of Health and Human Services and the U.S. Comptroller General, or their representatives,



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its books, documents, and records necessary to verify the nature and extent of the costs of those services, in accordance with Section 952 of the Omnibus Reconciliation Act of 1980.

- 6.5 FDA. Client and Cerner agree to promptly notify the other party of, and cooperate fully in responding to, inquiries and inspections by the U.S. Food and Drug Administration (the "FDA") and other regulatory bodies with respect to the System. Client agrees that prior to First Productive Use of the System, it will perform whatever tests it deems necessary to verify that the System, as used by Client, complies with all FDA and other governmental, accrediting, and professional regulatory requirements applicable to Client's use of the System in Client's environment.
- 6.6 <u>Information Management Tools.</u> Client acknowledges and agrees that the Licensed Software and Services are information management tools, many of which contemplate and require the involvement of professional medical personnel, and because medical information changes rapidly, some of the medical information and formulas may be out of date. Information provided is not intended to be a substitute for the advice and professional judgment of a physician or other professional medical personnel. Client acknowledges and agrees that physicians and other medical personnel should never delay treatment or make a treatment decision based solely upon information provided through the Licensed Software or Services. Client further acknowledges and agrees that the Licensed Software and Services are not intended to diagnose disease, prescribe treatment, or perform any other tasks that constitute or may constitute the practice of medicine or of other professional or academic disciplines.
- 6.7 <u>Intellectual Property.</u> Cemer retains all right, title, and interest, including intellectual property rights and all other rights, in the Licensed Software, Services, and Work Product. Cemer grants to Client a non-exclusive, non-transferable license to use Work Product for Client's own internal purposes in conjunction with the Services and for no other purpose.
- 6.8 Confidentiality. Except as permitted under this Agreement or as otherwise necessary to perform its obligations hereunder, Cerner and Client will not, nor will they permit their respective employees, agents, attorneys, or independent contractors to, disclose, use, distribute, sell, license, publish, or otherwise make available Confidential Information of the other party. Cerner and Client will each (a) secure and protect the other party's Confidential Information using the same or greater level of care that it uses to protect its own confidential and proprietary information of like kind, but no less than a reasonable degree of care, and (b) require their respective employees, agents, attorneys, and independent contractors who have a need to access Confidential Information to be bound by confidentiality obligations sufficient to protect the Confidential Information. Client will use Cerner Confidential Information accessed on restricted portions of Cerner.com only for the purpose of supporting its permitted use of the System or Services. Either party may disclose the other party's Confidential Information to the extent required by applicable law or regulation, including without limitation any applicable Freedom of Information Act or sunshine law, or by order of a court or other governmental entity, in which case the disclosing party will notify the other party as soon as practicable prior to such disclosure and no later than 5 business days after receipt of the order or request.
- 6.9 <u>HIPAA</u>. For Services requiring Cerner's use or disclosure of "protected health information" as defined under HIPAA, the parties agree to comply with the Business Associate Agreement attached as Exhibit B, which is incorporated herein by
- Access to Data. Cerner may use and disclose the Data for purposes permitted by HIPAA, and as necessary to perform and improve the Services or as agreed upon in an Ordering Document. Client agrees that Cerner may use and disclose performance and usage data for any purpose permitted by law so long as the data does not contain protected health information (as defined under HIPAA) or Client-specific identifiable information. In addition, Cerner may de-identify Data in accordance with the standards set forth in 45 C.F.R. 164.514(b) and may use and disclose such Data unless prohibited by applicable law.
- 6.11 Notices. All notices, requests, demands, or other communications relating to the other party's failure to perform or which otherwise affect either party's rights under this Agreement will be deemed properly given when furnished by receipted hand-delivery to the other party, deposited with an express courier, or deposited with the U.S. Postal Service (postage prepaid, certified mail, return receipt requested). The sender will address all notices, requests, demands, or other communications to the recipient's address as set forth on the signature page, and in the case of Cerner, to the attention of President; in the case of Client, to the attention of



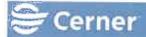
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- 6.12 <u>Change of Product Line.</u> Cerner may add, delete, or change the specifications with respect to products comprising Cerner's product line (but in no case reduce the overall functionality of same), and neither Client nor any third party will have a claim against Cerner regarding such modification.
- 6.13 <u>Governing Law.</u> This Agreement will be governed by, interpreted, and enforced in accordance with the laws of the State of Missouri, excluding Missouri's conflict of laws rules that would apply the substantive law of another jurisdiction.
- 6.14 <u>Severability</u>. This Agreement obligates the parties only to the extent that its provisions are lawful. Any provision prohibited by law will be ineffective (but only to the extent that, and in the locations where, the prohibition is applicable). The remainder of the Agreement will remain in full force and effect if the Agreement can continue to be performed in furtherance of the Agreement's objectives.
- 6.15 <u>Assignment.</u> Neither party may assign this Agreement or any Ordering Document, in whole or in part, without the prior written consent of the other party, except to an affiliate or pursuant to a merger, acquisition or the purchase of all or substantially all of the party's assets; provided, however, any assignment to a competitor of the other party will be void unless the other party provides its prior written consent. Any assignment of this Agreement or any Ordering Document in violation of this section is void.
- 6.16 Entire Agreement. This Agreement constitutes the entire agreement of the parties for the subject matter of the Agreement. This Agreement supersedes and terminates any prior and contemporaneous agreements, understandings, representations, claims, statements, or negotiations with respect to the subject matter of this Agreement. This Agreement may not be amended or qualified except by a writing executed by authorized officers of each party.
- 6.17 Survival. The following sections survive termination of this Agreement: 1 (Licensed Software), with respect to Cerner proprietary rights; 3.1 (Pass Through Provisions); 5.4 (Cerner Indemnity) with respect to any Third-Party Claims arising prior to termination; 5.5 (Client Indemnity); with respect to any Claims arising prior to termination and any use of the Licensed Software or Services following termination; 5.7 (Limitation of Liability); 5.9 (Limitation on Actions); 6.3 (Arbitration and Injunctive Relief); 6.6 (Information Management Tools); 6.7 (Intellectual Property); 6.8 (Confidentiality); 6.11 (Notices); 6.13 (Governing Law); and 6.18 (No Hire).
- 6.18 No Hire. Cemer and Client agree that, without the prior consent of the other party, neither will offer employment to or discuss employment with any of the other party's employees until one year after this Agreement is terminated; provided, the foregoing does not prohibit a general non-targeted solicitation of employment in the ordinary course of business or prohibit a party from hiring a person who contacts the hiring party at his or her own initiative without any direct or indirect solicitation by or encouragement from the hiring party.
- 6.19 <u>Waiver.</u> Waivers of and consents to any term, condition, right or remedy under this Agreement must be in writing to be effective. No waiver or consent granted for one matter or incident will be a waiver or consent for any different or subsequent matter or incident.
- 6.20 <u>Purchase Orders.</u> If Client submits its own form of purchase order to request products or Services from Cerner, any terms and conditions on the purchase order are of no force or effect and are superseded by this Agreement.
- 6.21 <u>Independent Contractor.</u> Cerner is an independent contractor, and none of Cerner's employees or agents will be deemed employees or agents of Client. None of the terms in this Agreement will be construed as creating a partnership, joint venture, agency, master-servant, employment, trust, or any other relationship between Client and Cerner or any of their employees.
- 6.22 Allocation of Risk. The parties are both sophisticated entities. The prices paid, the warranties, warranty disclaimers, limitations of liability, remedy limitations, and all other provisions of this Agreement, were negotiated to reflect and support an informed and voluntary allocation of risks between Client and Cerner, and both parties waive all protections of any trade practices statutes.
- 6.23 Compliance with Laws. Each party agrees to comply with all applicable laws, rules, and regulations.



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#### 7. DEFINITIONS

- Cerner Services means the services provided by Cerner and set forth in an Ordering Document. 7.1
- Confidential Information means all technical, business, financial, and other information that is disclosed by either party 7.2 to the other, whether orally or in writing, any disputes between the parties, the terms of this Agreement, pricing, Services, Work Product, Data (other than Protected Health Information, as defined by the Health Insurance Portability and Accountability Act, which is protected in accordance with the Business Associate Agreement), Documentation, all information and materials accessible on Cemer.com "Client-only" access, and all non-public information related to Cemer products, services and/or methodologies. "Confidential Information" does not include information (a) publicly available through no breach of this Agreement, (b) independently developed or previously known by Client or Cerner, or (c) rightfully acquired from a third party not under an obligation of confidentiality.
- Data means data that is collected, stored, processed or generated through Client's use of the System or Services. 7.3
- Documentation means the printed and on-line materials that assist Users, as updated from time to time. 7.4
- Equipment means all equipment components provided by Cerner under an Ordering Document. 7.5
- First Productive Use means Client's first use of an item of Licensed Software or a service to send patient, health plan, 7.6 or materials information for clinical, financial, or operational use.
- Licensed Software means the machine-readable form of software programs developed by Cerner and identified in an 7.7 Ordering Document and all items of applicable Documentation. It also includes New Releases, as well as any Cemerdeveloped content. "Licensed Software" does not include source code, Sublicensed Software, or any third-party
- Material Error means either an error that materially, adversely affects operation of the entire System or that creates a 7.8 serious loss of functionality important in the daily operation of a single module and for which a work around is not
- New Release means the distinctly identified (e.g. Release HNAM.20XX.01), comprehensive collection of updates and 7.9 enhancements to the Licensed Software that Cerner makes generally commercially available
- Ordering Document means the document (such as a schedule or sales order) setting forth the items being purchased 7.10 by Client, scope of use, pricing, payment terms, and any other relevant terms, which will be a part of and be governed by the terms and conditions of this Agreement.
- Permitted Facility means an entity identified as such in an Ordering Document and for whom Client (a) owns at least 7.11 50%, or (b) has the right to determine management direction.
- Services mean the Cerner Services and Third-Party Services, as modified and enhanced from time to time. 7.12
- Solution Description means the document provided by Cerner describing the applicable Licensed Software or Service. 7.13
- Sublicensed Software means all third-party software and content listed on an Ordering Document. 7.14
- Support means Cerner's ongoing effort to keep the Licensed Software in working order and to sustain the useful life of 7.15 the Licensed Software, including New Releases.
- System means the Equipment, Sublicensed Software, and Licensed Software listed on an Ordering Document. 7.16
- Third-Party Services means the services provided by a third party and described in an Ordering Document. 7.17
- User means an individual person to whom Client provides a unique password and sign-on ID for access to the Licensed 7.18 Software or Services.



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Work Product means any documentation, techniques, methodologies, inventions, analysis frameworks, software, or procedures developed, conceived, or introduced by Cerner in the course of Cerner performing Services, whether acting alone or in conjunction with Client or its employees, Users, affiliates or others. Work Product does not include any Confidential Information of Client.



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# EXHIBIT A SUPPORT SERVICES

Following is a high level description of the benefits received through the payment of Support fees:

Immediate Response Central ("IRC")	ter Cerner's support center that is staffed 24 hours per day, 7 days per week to resolve client mission-critical issues
2) Call Center	Cerner's support center that is available for non-mission critical problem determination, resolution, or identification of alternatives through consultative assistance on solution functionality.
3) Client Care Team	Cerner's support center that is available for training, Cerner events, financial and quote information.
4) Secured Communication	A data communications mechanism that facilitates problem resolution at the client site (secure and efficient method for service and support).
5) New Releases	Licensed Software updates that deliver increased functionality over time and allow the software to remain current with various technologies.
Knowledge transfer during service events	Education provided to Client's personnel during problem resolution leading to greater Client self-sufficiency.
7) Service Escalation Process	Defined process for any client to escalate an issue (whenever the client feels a service or support issue is not being addressed) to receive executive management focus.
8) Complete Service Record	Complete client service record identifying service issues, history, trends, and patterns.
On-Line Demographic Pro (Solution/technical attribut)	file Knowledge of client technical environment, supporting an efficient and effective problem resolution process (assumes hardware and Sublicensed Software Maintenance through Cerner).
10) Telephone, e-mail, Interne	For the convenience of Client, Cerner offers multiple avenues of communication for support requests and for support services.
11) Cerner.com	Internet access to solution documentation, communities of interest, announcements, on- line service request entry and the ability to review service activity.
12) Proactive Solution and Service Flashes	Advance information concerning new solutions, upcoming corrections, patches, etc.
13) Access To Cerner Direct	Access to a direct channel for ordering technology with 24-hour turnaround with discounted or competitive pricing through Cerner.com or the Cerner Direct Order Desk.

Cerner periodically improves and revises the content and delivery of its Support services to better meet the needs of clients; therefore, more specific details concerning the above services are available on Cerner.com.



West Virginia Department of Health & Human Resources Bureau 1-6CHCV7R January 29, 2020

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# EXHIBIT B BUSINESS ASSOCIATE PROVISIONS

<u>Definitions</u>. Capitalized terms used in this Exhibit, but not otherwise defined, shall have the same meanings set forth in
the Privacy Rule, the Security Rule, and the HIPAA Omnibus Final Rule (the "Final Rule"), which definitions are
incorporated into this Exhibit by reference.

Electronic PHI has the same meaning given to such term under the Privacy Rule and the Security Rule, including, but not limited to, 45 C.F.R. § 180.103, as applied to the information that Cerner creates, receives, maintains or transmits from or on behalf of Covered Entity.

PHI has the same meaning as the term "protected health information" in 45 C.F.R. § 160.103, as applied to the information created, received, maintained or transmitted by Cerner from or on behalf of Covered Entity.

Individual has the same meaning as the term "Individual" in 45 C.F.R. § 164.501 and includes a person who qualifies as a personal representative in accordance with 45 C.F.R. § 164.502(g).

Privacy Rule means the Standards for Privacy of Individually Identifiable Health Information at 45 C.F.R. Part 160 and Part 164, Subparts A and E.

Security incident has the same meaning given to such term in 45 C.F.R. § 164.304.

Security Rule means the Security Standards at 45 C.F.R. Part 160 and Part 164, Subparts A and C.

- Term. This Exhibit commences on the Effective Date and will terminate when all of the PHI provided by Covered Entity
  to Cerner, or created or received by Cerner on behalf of Covered Entity, is destroyed or returned to Covered Entity, or if
  it is infeasible to return or destroy PHI, protections are extended to such information, in accordance with Section 19(b)
  below.
- 3. Uses and Disclosures of PHI Pursuant to Cemer Business Agreement. Cerner may use or disclose PHI to perform functions, activities or services for, or on behalf of, Covered Entity as specified in the Cerner Business Agreement, provided that such use or disclosure would not violate the Privacy Rule if done by Covered Entity. Except as expressly provided in the Cerner Business Agreement or this Exhibit, Cerner will not assume any obligations of Covered Entity under the Final Rule. To the extent that Cerner is to carry out any of Covered Entity's obligations under the Privacy Rule pursuant to the terms of the Cerner Business Agreement or this Exhibit, Cerner will comply with the requirements of the Privacy Rule that apply to Covered Entity in the performance of such obligation(s).
- Use of PHI for Management, Administration, and Legal Responsibilities. Cerner may use PHI as necessary for the proper management and administration of Cerner or to carry out legal responsibilities of Cerner.
- 5. Disclosure of PHI for Management, Administration, and Legal Responsibilities. Cerner may disclose PHI received from Covered Entity for the proper management and administration of Cerner or to carry out legal responsibilities of Cerner, provided: (i) the disclosure is Required by Law; or (ii) Cerner obtains reasonable assurances from the person to whom the PHI is disclosed that it will be held confidentially and used or further disclosed only as Required by Law or for the purposes for which it was disclosed to the person, the person will use appropriate safeguards to prevent use or disclosure of the PHI, and the person notifies Cerner of any instance of which it is aware in which the confidentiality of the PHI has been breached.
- <u>Data Aggregation</u>. Cerner may use or disclose PHI to provide data aggregation services for the Health Care Operations
  of the Covered Entity as permitted by 45 C.F.R. § 164.504(e)(2)(i)(B), including use for statistical compilations, reports
  and all other purposes allowed under applicable law.
- 7. <u>De-Identified Data</u>. Cerner may de-identify PHI in accordance with the standards set forth in 45 C.F.R. § 164.514(b) and may use or disclose such data for any purpose. The Parties agree that any PHI provided to Cerner hereunder which is latter de-identified and therefore no longer identifies an individual (i.e., is no longer "protected health information" as defined by 45 C.F.R. § 160.103) will no longer be subject to the provisions set forth in this Exhibit.

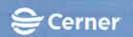


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- 8. <u>Appropriate Safeguards</u>. Cerner will establish and maintain appropriate safeguards and will, after the compliance date of the Final Rule, comply with the Security Rule with respect to Electronic PHI, to prevent use or disclosure of such Electronic PHI other than as provided for by the Cerner Business Agreement and this Exhibit.
- 9. Reports of Improper Use or Disclosure, Security Incident or Breach. Cerner will report to Covered Entity any use or disclosure of PHI not permitted under this Exhibit, Breach of Unsecured PHI or Security Incident, without unreasonable delay, and in any event no more than thirty (30) days following discovery; provided, however, that the Parties acknowledge and agree that this Section constitutes notice by Cerner to Covered Entity of the ongoing existence and occurrence of attempted but Unsuccessful Security Incidents (as defined below). "Unsuccessful Security Incidents" include, but are not limited to, pings and other broadcast attacks on Cerner's firewall, port scans, unsuccessful log-on attempts, denials of service and any combination of the above, so long as no such incident results in unauthorized access, use or disclosure of PHI. Cerner's notification to Covered Entity of a Breach include: (i) the identification of each individual whose Unsecured PHI has been, or is reasonably believed by Cerner to have been, accessed, acquired or disclosed during the Breach; and (ii) any particulars regarding the Breach that Covered Entity would need to include in its notification, as such particulars are identified in 45 C.F.R. § 164.404.
- Subcontractors and Agents. In accordance with 45 C.F.R. § 164.502(e)(1)(ii) and 45 C.F.R. § 164.308(b)(2), as applicable, Cerner will enter into a written agreement with any agent or subcontractor that creates, receives, maintains or transmits PHI on behalf of Cerner for services provided to Covered Entity, providing that the agent agrees to restrictions and conditions that are substantially similar to those that apply through this Exhibit to Cerner with respect to such PHI.
- Designated Record Set. To the extent Cerner maintains PHI in a Designated Record Set, Cerner shall:
  - A. To the extent applicable, make available PHI in accordance with 45 C.F.R. § 164.524. If an Individual makes a request for access pursuant to 45 C.F.R. § 164.524 directly to Cerner, or inquires about his or her right to access, Cerner will either forward such request to Covered Entity or direct the Individual to Covered Entity.
  - B. To the extent applicable, make available PHI for amendment and incorporate any amendments to PHI in accordance with 45 C.F.R. § 164.526. The evaluation of and requests for amendment of PHI maintained by Cerner will be the responsibility of Covered Entity. If an Individual submits a written request for amendment pursuant to 45 C.F.R. § 184.526 directly to Cerner, or inquires about his or her right to amendment, Cerner will either forward such request to Covered Entity or direct the Individual to Covered Entity.
- 12. <u>Documentation of Disclosures.</u> Cerner agrees to document such disclosures of PHI and information related to such disclosures as would be required for Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528. Cerner will document, at a minimum, the following information ("Disclosure Information"): (i) the date of the disclosure, (ii) the name and, if known, the address of the recipient of the PHI, (iii) a brief description of the PHI disclosed, (iv) the purpose of the disclosure that includes an explanation of the basis for such disclosure, and (v) any additional information required under the HITECH Act and any implementing regulations.
- 13. Provide Accounting of Disclosures. Cerner agrees to provide to Covered Entity, information collected in accordance with Section 12 of this Exhibit, to permit Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528. If an Individual makes a request for an accounting of disclosures of PHI pursuant to 45 C.F.R. § 164.528 directly to Cerner, or inquires about his or her right to an accounting of disclosures of PHI, Cerner will either forward such request to Covered Entity or direct the Individual to Covered Entity.
- 14. Mitigation. To the extent practicable, Cerner will reasonably cooperate with Covered Entity's efforts to mitigate a harmful effect that is known to Cerner of a use or disclosure of PHI that is not permitted by this Exhibit.
- 15. Minimum Necessary. Cerner may use and disclose PHI provided or made available from Covered Entity to the minimum extent necessary to accomplish the intended purpose of the use, disclosure, or request, in accordance with 45 C.F.R. § 164.514(d), and any amendments thereto.
- 16. <u>Access to Books and Records</u>. Cerner agrees to make its internal practices, books, and records relating to the use or disclosure of PHI received from, or created or received by Cerner on behalf of, Covered Entity available to the Secretary



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of the Department of Health and Human Services or the Secretary's designee for purposes of determining Covered Entity's compliance with the Privacy Rule.

- 17. <u>HiPAA Final Rule Applicability.</u> Cerner acknowledges that enactment of the HiTECH Act, as implemented by the Final Rule, amended certain provisions of HIPAA in ways that now directly regulate, or will on future dates directly regulate, Cerner under the Privacy Rule and the Security Rule. Cerner agrees, as of the compliance date of the Final Rule, to comply with applicable requirements imposed under the Final Rule.
- Responsibilities of Covered Entity. Covered Entity will:
  - A. Promptly notify Cerner of any limitation(s) in its Notice of Privacy Practices in accordance with 45 C.F.R. §164.520, to the extent that such limitation may affect Cerner's use or disclosure of PHI. Covered Entity will provide such notice no later than fifteen (15) days prior to the effective date of the limitation:
  - B. Promptly notify Cerner of any changes in, or revocation of, permission by an Individual to use or disclose his or her PHI, to the extent that such changes may affect Cerner's use or disclosure of PHI. Covered Entity will provide such notice no later than fifteen (15) days prior to the effective date of the change. Covered Entity will obtain any consent or authorization that may be required by the Privacy Rule, or applicable state law, prior to furnishing Cerner with PHI;
  - C. Promptly notify Cerner of any restriction on the use or disclosure of PHI that Covered Entity has agreed to or is required to abide by under 45 C.F.R. §164.522, to the extent that such restriction may affect Cerner's use or disclosure of PHI. Covered Entity will provide such notification no later than fifteen (15) days prior to the effective date of the restriction. If Cerner reasonably believes that any restriction agreed to by Covered Entity pursuant to this Section may materially impair Cerner's ability to perform its obligations under the Cerner Business Agreement or this Exhibit, the Parties will mutually agree upon any necessary modification of Cerner's obligations under such agreements; and
  - D. Not request Cerner to use or disclose PHI in any manner that would not be permissible under the Privacy Rule, the Security Rule or the Final Rule if done by Covered Entity, except as permitted pursuant to the provisions of Sections 4-7 of this Exhibit.

#### 19. Effect of Termination.

- A. Except as provided in Paragraph B of this Section 19, upon termination of the Cerner Business Agreement or this Exhibit for any reason, Cerner will return or destroy all PHI received from Covered Entity, or created or received by Cerner on behalf of Covered Entity, and will retain no copies of the PHI.
- B. If it is infeasible for Cerner to return or destroy the PHI upon termination of the Cerner Business Agreement or this Exhibit, Cerner will: (i) extend the protections of this Exhibit to such PHI; and (ii) limit further uses and disclosures of such PHI to those purposes that make the return or destruction infeasible, for so long as Cerner maintains such PHI.
- 20. <u>Termination for Cause</u>. Upon either Party's knowledge of a material breach by the other Party of this Exhibit, such Party will provide written notice to the breaching Party stating the nature of the breach and providing an opportunity to cure the breach within sixty (60) days. Upon the expiration of such 60-day cure period, the non-breaching Party may terminate this Exhibit and, at its election, the Cerner Business Agreement, if cure is not possible.
- 21. <u>Cooperation in Investigations</u>. The Parties acknowledge that certain breaches or violations of this Exhibit may result in litigation or investigations pursued by federal or state governmental authorities of the United States resulting in civil liability or criminal penalties. Each Party will cooperate in good faith in all respects with the other Party in connection with any request by a federal or state governmental authority for additional information and documents or any governmental investigation, complaint, action or other inquiry.
- No Third-Party Beneficiaries. Nothing herein, express or implied, is intended to or confers upon any other person or entity, any legal or equitable right, benefit or remedy of any nature whatsoever under or by reason of this Exhibit



West Virginia Department of Health & Husman Resources Bureau 1-6CHCV/R January 29, 2020

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Effect of Contract. In the event of inconsistency between the provisions of this Exhibit and mandatory provisions of the Privacy Rule, the Security Rule or the Final Rule, or their interpretation by any court or regulatory agency with authority 23. over Cerner or Covered Entity, such interpretation will control; provided, however, that if any relevant provision of the Privacy Rule, the Security Rule or the Final Rule is amended in a manner that changes the obligations of Cerner or Covered Entity that are embodied in terms of this Exhibit, then the Parties agree to negotiate in good faith appropriate non-financial terms or amendments to this Exhibit to give effect to such revised obligations. Where provisions of this Exhibit are different from those mandated in the Privacy Rule, the Security Rule or the Final Rule, but are nonetheless permitted by such rules as interpreted by courts or agencies, the provisions of this Exhibit will control.



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West Virginia Department of Health & Human Resources Bureau Prepared For:

Quote March 31, 2020

One Davis Square, Suite 100 East

Expiration Date:

Charleston, WV 25301-1729 USA

Cerner Sales Contact: Joni Wheeler

Phone #: ((816) 313-7062

E-mall Address: joni.wheeler@cemer.com

This Cerner Sales Order is made on \_\_\_\_\_\_, 2020 ("Effective Date"), between Client and Cerner State & Local Government Services, Inc. ("Cerner"),. This Cerner Sales Order is subject to, and incorporates by reference, the Cerner Business Agreement, , 2020, between Client and Cerner (the "Agreement").

### PERMITTED FACILITIES

For use and access by these facilities:

	Address	City	State/ Province	Zip/Postal Code	Country
West Virginia Department of Health & Human Resources Bureau	One Davis Square, Suite 100 East	Charleston	WV	25301-1729	USA

The parties may add or substitute Permitted Facilities by amending this section, provided Client pays any relevant scope of use expansion fees in the section below.

### SCOPE OF USE

Scope of Use Limits. Client will use the following solutions in accordance with the Solution Descriptions and subject to the scope of use limits set forth below.

Solution Description	Scope of Use Metric	Scope of Use Limit	Scope of Use Metric Description
Cerner Healthe Record, Healthe EDW, Cerner Healthe Data Lab with Healthe EDW	Service Population		
Cerner Master Person Management HealtheAnalytics: HEDIS Quality, HealtheAnalytics: HEDIS Quality - HealtheRgistries, Millman Advanced Risk Adjusters	Member	564,000	
CPT Codes for Healtheintent	CPT User Per Release	100	Per user as defined by the American Medical Association (AMA) and per release, typically annually, of the code set by the AMA.
Data Acquisition - All Other Data Sources	Connection	50	Enabling the discovery of patients and clinical data between two disparate sources, (EMR, PHR, state networks, regional networks and other communities etc).
Data Acquisition - Cemer Source	Connection	3	Enabling the discovery of patients and clinical data between two disparate sources, (EMR, PHR, state networks, regional networks and other communities etc).
HealtheRegistries, Truven Service Categories for HealtheAnalytics	Contracted Member	564,000	Total number of unique persons that qualify for one or more registries and that are subject to a client identified at-tisk arrangement and/or formal program. Examples of an at-tisk arrangement would be an Accountable Care Organization, Medicare Shared Savings Program, Medicare Advantage Program, Clinically Integrated Network, Gain-share or At risk commercial payor contract, or other similar type programs.

Scope of Use Expansion: Shared Computing Services. The quantities in the "Solutions and Services" section represent the scope of use limits for each service. If a scope of use limit is exceeded, Client agrees to expand the scope of use at Cerner's



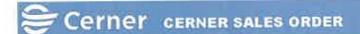
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then-current fees. Scope of use will be measured periodically by Cerner's system tools. Any additional fees will begin on the date the limit was exceeded, and paid within 30 days following Client's receipt of an invoice for such fees.

#### PAYMENT TERMS

### SHARED COMPUTING SERVICES

One-Time Fees. The one-time Shared Computing Services fees will be paid on the Effective Date.

Monthly Fees. The monthly Shared Computing Services fees are payable annually beginning on the Effective Date.

#### PROFESSIONAL SERVICES

<u>Fixed Fee.</u> Fifty percent (50%) of the total professional services fees will be paid on the Effective Date. The remaining 50% is payable 90 days following the Effective Date.

#### FEE INCREASES

Cerner may increase the monthly fee for Support services and each recurring service (such as managed services, application services, subscription services, application management services, employer services, transaction services, recurring professional services, and Shared Computing Services) any time following the initial twelve (12) month period after such recurring service fees begin (but not more frequently than once in any twelve (12) month period) by giving Client sixty (60) days prior written notice of the price increase. The amount of such annual increase will equal CPI plus 5% per annum. Cerner may also increase the fees tany time during the term if a Cerner third party increases the fees to be paid by Cerner, with such increase being limited to the amount of increase in Cerner's fee to the third party.

### TERM AND TERMINATION

Other Services. All recurring services (such as managed services, application services, subscription services, application management services, employer services, transaction services, and Shared Computing Services) begin on the Effective Date, and continue for the term set forth in the "Solutions and Services" section. At the end of the applicable term, each service will automatically renew for additional 12 month periods at the rate charged in the final period of the then-current term, unless either party provides the other party with written notification of its intent to terminate the relevant service no less than 60 days prior to the expiration of the applicable then-current term.

#### SOLUTION DESCRIPTIONS

Each solution with a Solution Description has a code noted in the "Solutions and Services" section of this Cerner Sales Order, and that code can be entered at <a href="https://solutiondescriptions.cerner.com">https://solutiondescriptions.cerner.com</a> to view the Solution Description. These Solution Descriptions are incorporated into this Cerner Sales Order by reference. In the event a Solution Description is not published on Cerner's website, it may be attached to this Cerner Sales Order.

### PASS-THROUGH PROVISIONS

Where pass-through provisions are applicable to third-party products and services, these provisions are referenced by a pass-through code in the "Solutions and Services" section of this Cerner Sales Order, and that code can be entered at <a href="https://passthroughprovisions.cerner.ccm/">https://passthroughprovisions.cerner.ccm/</a> to view the pass-through provisions. These pass-through provisions are incorporated into this Cerner Sales Order by reference.

### FINANCIAL OVERVIEW



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Description	One-Time Fees	Monthly Fees	Annual Fees
Shared Computing Services	2,055,000.00	913,637.00	•
Professional Services			
Fixed Fee	361,200.00	•	-
TOTALS:	2,416,200.00	913,637,00	•

All prices in this Cerner Sales Order are shown in US Dollar (USD).

### SOLUTIONS AND SERVICES

### SHARED COMPUTING SERVICES

Sólution Code	Description	Term (Mo)	Solution Description Code	Pass-Through Code
Quote: Solutions	(1-14902635939-R-3)			
HP-10115C	HautheRegistries	60	SD100061_01	61400_TSH_C
HP-10110C	Comer HealtheRegistries Deployment			
HP-10160C	Cerner HealtheRecord	60	SD100098_01	42000_HLF
HP-10161C	Cemer HealtheRecord Deployment			
HP-10121C	Data Acquisition - Cerner Source	60		
HP-10122C	Data Acquisition - Cerner Source - Satup			
HP-10214C	Data Acquisition - All Other Data Sources	60		
HP-10215C	Data Acquisition - All Other Data Sources - Setup			
HP-10135C	Cerner Master Person Management	60	SD100094_01	1
HP-22095	CPT Codes for Healtheintent	60		100015_001
HP-10149C	HealtheEDW	60	SD100096_02	61400_TSH_C
HP-10150C	HealthsEDW Setup			1
TRVN-SC-1117C	Truven Service Categories for HealtheAnalytics	60		41000_TRU
HP-10153C	Corner HealtheDataLab with HealtheEDW	60	SD101005_02	
HP-10154C	HealtheDataLab Setup Fee			
HP-10192C	HealtheAnalytics: HEDIS Quality	60	SD101110_01	61400_TSH_C
HP-10187C	HealtheAnalytics: HEDIS Quality - HealtheRegistries	60	SD101110_01	61400_TSH_C
HP-10193C	HealthsAnalytics: HEDIS Quality Satup Fee			
HP-10155C	Milliman Advanced Risk Adjusters	60		



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#### PROFESSIONAL SERVICES

Pf	Norman ender et	Project Professional Serivces (1-14974)	and Made and American	Solution Rate Metric City Code	
1		Program Management	FF	Organizational Change Management	
1		Reg Compliance AMT	FF	Organizational Change Management Workshops	
				OCM Assessment	

"FF = Fixed Fee / FFS = Fee For Service
Professional services pricing is valid until March 31, 2020. If a Cerner Seles Order is not executed on or before such date, this pricing is considered null end void and will be subject to revision. Cerner will not schedule resources for Implementation services until this Cerner Sales Order has been executed by both parties and processed by Cerner.

#### ADDITIONAL TERMS AND PROVISIONS

### SHARED COMPUTING SERVICES

Client Responsibilities. Client agrees to comply with all applicable laws, rules, and regulations as they relate to its use of the Services and its provision of the Services to Users. Client or its Users must obtain all appropriate and necessary authorizations and consents to use or disclose any personally identifiable information in compliance with all federal and state privacy laws, rules, and regulations. Client must have security and privacy policies and procedures in place that govern its Users' ability to access information on or through the Services and to prevent unauthorized access, use, and disclosure of personally identifiable information including, but not limited to, protected health information.

Medical Record. The Services do not constitute a medical record. Client and its Users are responsible for ensuring that the information sent through the Services is incorporated into the applicable patient's medical record as necessary. Client acknowledges that the health information exchanged by Users may not include the individual's full and complete medical record or history. Cerner may leverage a public cloud infrastructure to provide the Services.

<u>Access to Data</u>. Cemer may use and disclose the Data as necessary to perform, analyze and improve the Services, to the extent permitted by law. Cerner may use and disclose performance and usage data for any purpose permitted by law so long as the data does not contain protected health information as defined under HIPAA or Client-specific identifiable information. Data means data that is collected, stored, processed or generated through Client's use of the Services.

Right to Aggregate. Cerner may use or disclose protected health information, as defined by 45 C.F.R. 160.103, to provide data aggregation services as permitted by 45 C.F.R. 164.504(e)(2)(i)(B), including use for statistical compilations, reports and all other purposes allowed under applicable law.

<u>De-identify and Use Rights</u>. Cerner may de-identify protected health information in accordance with the standards set forth in 45 C.F.R 184.514(b) and may use or disclose such data unless prohibited by applicable law.

Information Management Tools. Client acknowledges and agrees that the Services are information management tools, many of which contemplate and require the involvement of professional medical personnel, and because medical information changes rapidly, some of the medical information and formulas may be out of date. Information provided is not intended to be a substitute for the advice and professional judgment of a physician or other professional medical personnel. Client acknowledges and agrees that physicians and other medical personnel should never delay treatment or make a treatment decision based solely upon information provided through the Services. Client further acknowledges and agrees that the Services are not intended to diagnose disease, prescribe treatment, or perform any other tasks that constitute or may constitute the practice of medicine or of other professional or academic disciplines.



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### SHARED COMPUTING SERVICES

Third Party Services. Certain Services have been developed by Cerner's third party suppliers (the "Third Party Services"). The Third Party Services may be provided under the required terms of the applicable supplier, which will be available on Cerner's website. Cerner is not liable under this Cerner Sales Order for any damages of any kind or nature related to or arising out of Third Party Services. Cerner does not warrant or provide any indemnities on Third Party Services. To the extent that any third party pass-through provisions contain liability limitations with respect to the Third Party Services, such limitations state the total maximum liability of Cerner (and then only to the extent that Cerner can collect from the supplier for Client's benefit) and each supplier with respect to the Third Party Services.

#### CERNER HEALTHECARE / GERNER HEALTHERECORD / CERNER HEALTHEREGISTRIES / CERNER MASTER PERSON MANAGEMENT / DATA ACQUISITION

Statutory and/or Regulatory Changes. In the event of any change to federal, state, or local law or regulation applicable to the Services, the parties will negotiate in good faith for a period of 15 days to amend this Cerner Sales Order to fully comply with any material changes. If the parties have not reached agreement on the amendment at the end of the 15-day term, Cerner may immediately terminate this Cerner Sales Order without further liability to Client. Additionally, Cerner may amend the fees if Cerner's cost of operation is increased due to an adjustment in charges imposed upon Cerner by a federal, state, or local governmental unit, law, regulation, or statute, provided that any such adjustment shall be limited to the amount of the change.

### CERNER HEALTHEDATALAB

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AWS Environment. Cerner will set up, maintain, and support the Amazon Web Services (AWS) domain as it relates to Client's use of Cerner Healthe DataLab. Client's scope of use shall not exceed the limits set forth below.

Scope of Use Metric Scope of Use Limit / Assumption		
Users measured as total users with a unique login ID	5	
Usage measured in hours per week 20		
Data storage measured in gigabytes (GB) 3,00		
Arnazon Elastic Compute Cloud (EC2) instances		
Amazon Relation Database Services (RDS) database instances		

### SCOPE OF SERVICES

This section defines the service deliverables ("Scope") for the services set forth in this Cerner Sales Order.

### SHARED COMPUTING SERVICES

	HEALTHEANALYTICS - HEDIS QUALITY SETUP
Cerner Responsibilities	<ul> <li>Assist Client in achieving project readiness for strategy, data, and solution implementation</li> <li>Evaluate data sources with Client to connect to the HealtheIntent platform</li> </ul>



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100	HEALTHEANALYTICS - HEDIS QUALITY SETUP.
مرقمة د بالمدار الخدار المحدد ها الأدراء الأجافة بالدارة المحدد المحدد	Assist Client in understanding the data acquisition needs to satisfy reporting requirements
	<ul> <li>Provide consultation on appropriate measure selection in accordance with Client's documentation practices and specialty needs (provider mix)</li> </ul>
	<ul> <li>Manage and leverage project plan for events and activities associated with implementation</li> </ul>
	<ul> <li>Guide Client through design decisions impacting features and workflows</li> </ul>
	<ul> <li>Complete action items to assess current state, identify improvement opportunities, and direct testing, and implementation</li> </ul>
	Evaluate documentation practices to determine if data will be discrete and appropriate
	Complete internal validation of feature functionality and content prior to Client validation
	<ul> <li>Collaborate with Client on approach to utilize HealtheIntent security model and tools for grantin and restricting access to solutions, measurements, reports, data, and other variables as needed</li> </ul>
Client	Identify the value objectives that the implementation is supporting
Responsibilities	Establish communication plan and deployment strategy
	Ensure governance support
	Provide use cases for solution
	<ul> <li>Ensure resource availability and experience for design, training and implementation that aligns wit each proposed use case</li> </ul>
	Perform validation activities
	<ul> <li>Create training plan and train end users for initial implementation and subsequent end-user training</li> </ul>
	Localize Cerner standard training materials and test scripts as needed
	Engage with other suppliers as necessary to provide data sources for Cerner HealtheIntent
	Establish any data use agreements between Client organization and data source entity
	Perform source data extract creation and ongoing maintenance surrounding data acquisition
	Ensure User authorization
	<ul> <li>Maintain personnel/User access permissions by manual build in the HealtheIntent tool or b automated transmission through RESTful application program interfaces (APIs)</li> </ul>
	Ensure User authentication
	<ul> <li>Supply a federated identity provider software which supports either Security Assertion Marku Language (SAML) 2.0 or OpenID 2.0</li> </ul>
Deliverables	Cerner and Client will complete a design workbook with agreed-upon design decisions
	Cerner will provide the following:
	Executive status reports to track progress and risks for this implementation
	o Localized future-state workflows
	o Train the trainer to an agreed upon list of trainees
	o Maintenance training to the appropriate individuals
	o Training around SAP BusinessObjects and Tableau dashboards (if applicable)
	Access to standard training materials and online help pages
	o Online access to the application as well as to the Client-specific content page
	<ul> <li>Access to information sources such as community calls, illuminations, and uCern groups whice will connect the Client to solution and content information</li> </ul>
Project Assumptions	Cerner consulting engagement commencement is determined by the Client's readiness from strategy, data, and solution standpoint.

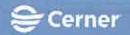


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# HEALTHEANALYTICS - HEDIS QUALITY SETUP

- Devices must be capable of broadband internet connectivity and have appropriate processing and memory storage necessary for Web browsing.
- External data sources will be acquired through the Cerner Healtheintent platform.
- Client will utilize necessary tools to create and maintain any custom reports needed; Cerner is not responsible for maintaining Client custom reports and dashboards.
- Client will transition to support 30 days after activation of solution
- Client will have access to support teams to assist with ongoing maintenance and questions.
- Fees associated with this Scope assume a single cycle of work from design to implementation.
   Client may purchase additional services at Cemer's then-current fees if additional services are requested.
- Client has contracted with Cerner for the Cerner HealtheIntent platform master patient index service or has an enterprise master patient index service across disparate systems.
- Client will join relevant Cerner-sponsored groups, community calls, and illuminations to stay up to date with solution and content advancements
- Content is only available in the HeeltheAnalytics solution and is not available to be viewed in the HealtheRegistries solution.
- All registry and measures algorithms are defined and controlled by the HEDIS specifications and cannot be localized.
- HealtheAnalytics: HEDIS Quality content will include supporting 3 measurement periods, two defined by Cerner (current calendar and following calendar year) and one Client defined measurement period.
- Clients can only have one content year actively processing at a time (i.e. HEDIS 2019 or HEDIS 2018) with the exception of a dedicated period for reporting of the previous year and validation of newly released content.

### HEALTHEDATALAB SETUP

#### Cerner Tasks/Activities

- Transform and deploy Fast Healthcare Interoperability Resource (FHIR)-formatted data from Client HealtheIntent tenant population
- Create mechanism to refresh data into the Amazon Web Services (AWS) elastic cloud on a recurring basis
- Provide solution validation materials and project plan
- Work with Client on obtaining Lightweight Directory Access Protocol (LDAP) connectivity information
- Provide Client-domain management tools (only if Cerner-managed AWS domains)
- Deploy and operate the following AWS solutions for use with Cerner HealtheDataLab initiated by either Cerner directly or from Client
  - o Amazon EC2
  - o Amazon Simple Storage Service
  - Amazon Elastic MapReduce
  - Amezon Relational Database
  - Amazon Aurora Service
  - AWS CloudFormation
  - Amezon CloudWatch



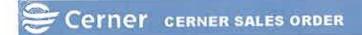
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	HEALTHEOATALAB SETUP
is, at grave movement converse under 3 behalv / 1798 des	o AWS Directory Service o Amazon VPC Service o Amazon Route 53 o Amazon Simple Notification Service (only if Cerner-managed) o AWS Data Pipeline (only if Cerner-managed)
Client Tasks/Activities	<ul> <li>Establish data governance policies to ensure AWS access of clinical data can be granted to end users by trusted broker</li> <li>Work with information technology group on establishing LDAP connectivity for Cemer</li> <li>Train applicable end users using Cerner's documentation, supplemented by Client materials when applicable</li> <li>Provide at least 1 resource as a direct contact and superuser to assist Cerner with solution validation activities</li> </ul>
Deliverables	Regularly-refreshed elastic cloud environment of HealtheIntent population data in FHIR format     Training and support materials for use of elastic cloud environment
Project Assumptions	Client has established data governance practices, and is capable of loading clinical identified and/or de-identified data into AWS cloud  Client has purchased and implemented HealtheEDW
Trademarks	<ul> <li>FHIR is the registered trademark of Health Level Seven International</li> <li>Amazon Web Services, AWS, Amazon Aurora, Amazon CloudWatch, Amazon EC2, Amazon Relational Database, Amazon Route 53, Amazon Simple Notification Service, Amazon Simple Storage Service, Amazon VPC, and AWS CloudFormation are trademarks of Amazon.com, Inc. or its affiliates in the United States and/or other countries.</li> </ul>

	DATA ACQUISITION - ALL OTHER DATA SOURCES (HE 10214C HE 10214C)
Cemer Tasks/Activities	Receiving and loading historical and periodic synchronization Data from Client Configuring and testing Cerner-side interface connectivity Standardizing Data by: Standardizing proprietary codified Data to industry vocabularies Cerner recommending the mapping and Client validating Cleansing Data by detecting and correcting incomplete Data; flagging inaccurate Data for review Normalizing Data to ensure semantic interoperability between 2 different standard vocabularies per concept, grouping codes from each vocabulary with identical meanings
Client Tasks/Activities	<ul> <li>Extracting all data from non-Cerner sources (such as utilizing in-house talent, supplier consultants, and third-party consultants)</li> <li>Providing both historical extracts and periodic synchronization updates per data source as needed for end User program functionality</li> <li>Configuring and testing Client-side interface connectivity</li> <li>Obtaining the proper permission and send, or make available, Data from disparate continuum of care systems</li> <li>Ensuring quality and accuracy of the Data along with formatting</li> </ul>



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	DATA ACQUISITION - ALL OTHER DATA SOURCES (HE 10214C HE 10215C)
Deliverables	Cerner will deliver a Java-based utility that is deployed by Client that will transmit files to the HealtheIntent platform  Transaction types available: character separated value file format or Health Level Sever International  Cerner will provide initial consulting services to identify the disparate continuum of care systems and which protocol should be used for the type of feed
Project Assumptions	<ul> <li>Client has an enterprise master patient index service across the disparate continuum of care systems or has contracted with Cerner to provide this Service</li> <li>It is requested that all nomenclature is standardized, but this is not required; Cerner HealtheIntern platform has the capability to standardize proprietary codes to industry vocabularies</li> <li>This Scope is to define the scope of work for the Cerner HealtheIntent platform Service only</li> <li>Cerner and Client will collaborate on the configuration of the HealtheIntent solutions</li> <li>Client may contribute concepts, ideas, and related materials toward its configuration</li> <li>Client understands and agrees that Cerner may freely use such concepts, ideas, and related materials (input) for its internal purpose as well as for the configuration of HealtheIntent solutions for other clients; Client may affirmatively designate particular items of input for use only in the configuration of Client's HealtheIntent solutions and not for other clients</li> <li>The Cerner HealtheIntent platform can receive Data using the following protocols for these specific population health subsets of data</li> <li>Population requirements</li> <li>Data contains appropriate data points as defined by the program</li> <li>Data may be sent to the HealtheIntent platform on a schedule or near real-time intervals</li> <li>Data may include an historical extract in the same flat file format to be loaded into the Cerner HealtheIntent platform</li> </ul>

	DATA ACQUISITION - CERNER SOURCE
Cerner Tasks/Activitles	Extract and/or crawl the Cerner data sources into HealtheIntent data models     Standardize Data by:     Standardizing proprietary codified Data to industry vocabularies     Cerner recommending the mapping and Client validating     Cleanse Data by detecting and correcting incomplete Data; flagging inaccurate Data for review     Normalize Data to ensure semantic interoperability between 2 different standard vocabularies per concept, grouping codes from each vocabulary with identical meanings
Cilent Tasks/Activities	Ensure quality and accuracy of the Data along with formatting
Project Assumptions	<ul> <li>Client has an enterprise master patient index service across the disparate continuum of care systems or has contracted with Cerner to provide this Service</li> </ul>
	<ul> <li>It is requested that all nomenclature is standardized, but this is not required as Cerner Healtheintent platform has the capability to standardize proprietary codes to industry vocabularies</li> </ul>
	<ul> <li>This Scope is to define the scope of work for the Cerner Healtheintent platform Service only</li> </ul>
	Cerner and Client will collaborate on the configuration of the HealtheIntent solutions
	o Client may contribute concepts, ideas, and related materials toward its configuration



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	DATA ACQUISITION - CERNER SOURCE
-	Client understands and agrees that Cerner may freely use such concepts, ideas, and related materials (input) for its internal purpose as well as for the configuration of HealtheIntent solutions for other clients; Client may affirmatively designate particular items of input for use only in the configuration of Client's HealtheIntent solutions and not for other clients

1111	DERNER HEALTHEREGISTRIES DEPLOYMENT
Cerner Tasks/Activities	<ul> <li>Assist Client in achieving project readiness for strategy, data, and solution implementation</li> <li>Evaluate data sources with Client to connect to the HealtheIntent platform</li> <li>Assist Client in understanding the data acquisition needs to satisfy reporting requirements</li> <li>Provide consultation on appropriate measure selection in accordance with Client's documentation practices and specialty needs (provider mix)</li> <li>Manage and leverage project plan for events and activities associated with implementation</li> <li>Guide Client through design decisions impacting features and workflows</li> <li>Complete action items to assess current state identify improvement opportunities, and direct localization, testing, and implementation</li> <li>Evaluate documentation practices to determine if data will be discrete and appropriate</li> <li>Complete internal validation of feature functionality and content prior to Client validation</li> <li>Collaborate with Client on approach to utilize HealtheIntent security model and tools for granting and restricting access to solutions, measurements, reports, data, and other variables as needed</li> <li>Guide Client through the implementation of the Recommendations Alignment including the following</li> <li>Assist Client in the review and crosswalk of faceup HealtheRegistries measures and Health Maintenance expectations</li> <li>Map Health Maintenance satisfiers where appropriate and requested by client</li> <li>Activate Rules Expectation Service (RES)</li> </ul>
Client Tasks/Activities	Identify the value objectives that the implementation is supporting  Establish communication plan and deployment strategy  Ensure governance support  Provide use cases for solution  Ensure resource availability and experience for design, training and implementation that aligns with each proposed use case  Perform validation activities  Create training plan and train end users for initial implementation and subsequent end-user training  Localize Cerner standard training materials and test scripts as needed  Engage with other suppliers as necessary to provide data sources for Cerner HealtheIntent  Establish any data use agreements between Client organization and data source entity  Perform source data extract creation and ongoing maintenance surrounding data acquisition  Ensure User authorization  Maintain personnel/User access permissions by manual build in the HealtheIntent tool or b automated transmission through RESTful application program interfaces (APIs)



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· W	GERNER HEALTHEREGISTRIES DEPLOYMENT
1996 and 199	Ensure User authentication     Supply a federated identity provider software which supports either Security Assertion Markup
	Language (SAML) 2.0 or OpenID 2.0  Build and maintenance of additional scorecard
	Configure Recommendations Alignment including building any new Health Maintenance expectations and satisfiers as well as updating pre-existing Health Maintenance build; if assistance is needed, additional Services may need to be contracted.
	<ul> <li>Configuration of Recommendations Alignment in the Cerner Millennium production and Cerner Millennium non-production (optional) environments</li> </ul>
Deliverables	Cerner and Client will complete a design workbook with agreed-upon design decisions Cerner will provide the following: Executive status reports to track progress and risks for this implementation Localized future-state workflows
	o Train the trainer to an agreed upon list of trainees o Maintenance training to the appropriate individuals o Training around SAP BusinessObjects and Tableau dashboards (if applicable)
	<ul> <li>Access to standard training materials and online help pages</li> <li>Online access to the application as well as to the Client-specific content page</li> <li>Access to information sources such as community calls, illuminations, and uCern groups to connect the Client to solution and content information</li> </ul>
Project Assumptions	<ul> <li>Registries selected will align with define use cases</li> <li>Cerner standard registries will have defined registry and measure algorithms</li> <li>Cerner consulting engagement commencement is determined by the Client's readiness from a strategy, data, and solution standpoint</li> <li>Cerner will complete build in 1 production and 1 non-production domain if Cerner Millennium integration is utilized</li> <li>Recommendations Alignment will be implemented for clients with Cerner Millennium Ambulatory solution</li> <li>Devices must be capable of broadband internet connectivity and have appropriate processing and memory storage necessary for Web browsing</li> <li>External data sources will be acquired through the Cerner HealtheIntent platform</li> <li>Client will utilize necessary tools to create and maintain any custom reports needed; Cerner is not responsible for maintaining Client custom reports and dashboards</li> <li>Client will transition to support 30 days after activation of solution</li> <li>Client will have access to support teams to assist with ongoing maintenance and questions</li> <li>Fees associated with this Scope assume a single cycle of work from design to implementation. Client may purchase additional services at Cerner's then-current fees if additional services are requested.</li> <li>The duration and approach will be dictated by the go-live plan, the overall scope of the programs, and the degree of clinical transformation that is occurring</li> <li>Client has contracted with Cerner for the Cerner HealtheIntent platform master patient index service or has an enterprise master patient index service across disparate systems</li> </ul>
	Client will join relevant Cerner-sponsored groups, community calls, and illuminations to stay up to date with solution and content advancements



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	CERNER MASTER PERSON MANAGEMENT (HP.101050)
Functional Overview	Cerner Master Person Management is a service provided by an embedded application in Cerner HealtheIntent that evaluates person records from disparate systems to link them into a single unified record per person  Data profiling and strategies for improving data quality is included  Clinical data can be included in the data elements to be evaluated by the algorithm versus just demographics  Multi pass algorithms will be employed to improve performance and continuously improve the automatic linking of person records that would otherwise require human review
Cerner Tasks/Activities	A. Confirm configuration settings are agreeable  B. Create an appropriate method to match person records  C. Provide resources to monitor and report on the Master Person Management queue  D. Evaluate and link patient information dependent on the defined criteria by Client  E. Attempt to manually match patient records that do not meet the conditions for the Services to automatically match them  Provide reports to Client that show samples of patient record comparisons from the various categories of records (including those automatically matched, those manually matched, and those which were not matched), enabling Client to audit the process
Client Tasks/Activities	F. Provide a project management resource and integration architect to work with Cerner G. Provide Cerner with patient samples  Evaluate Cerner's initial settings
Project Assumptions	H. The process of matching patients from disparate databases using the Services is not an exact science and mismatches may occur     Cerner does not warrant that the Services will be error-free and Cerner cannot be responsible for the occasional mismatch of patients

	HEALTHEEDW SETUP
Cerner Tasks/Activities	Assist Client in achieving project readiness for strategy, data, and solution implementation     Evaluate data sources with Client to connect to the HealtheIntent platform     Assist Client in understanding the data acquisition needs to satisfy reporting requirements     Manage and leverage project plan for events and activities associated with implementation     Guide Client through design decisions impacting features and workflows     Complete action items to assess current state, identify improvement opportunities, and direct localization, testing, and implementation     Evaluate documentation practices to determine if data will be discrete and appropriate     Complete internal validation of feature functionality and content prior to Client validation     Collaborate with Client on approach to utilize HealtheIntent security model and tools for granting and restricting access to solutions, measurements, reports, data, and other variables as needed
Client Tasks/Activities	<ul> <li>Identify the value objectives that the implementation is supporting</li> <li>Establish communication plan and deployment strategy</li> <li>Ensure governance support</li> <li>Provide use cases for solution</li> </ul>

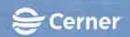


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	HEALTHEEDW SETUP (HP.10450C)
	<ul> <li>Ensure resource availability and experience for design, training and implementation that aligns will each proposed use case</li> <li>Perform validation activities</li> <li>Create training plan and train end users for initial implementation and subsequent end-user training. Localize Cerner standard training materials and test scripts as needed</li> <li>Engage with other suppliers as necessary to provide data sources for Cerner HealtheIntent</li> <li>Establish any data use agreements between Client organization and data source entity</li> <li>Perform source data extract creation and ongoing maintenance surrounding data acquisition</li> <li>Ensure User authorization</li> <li>Maintain personnel/User access permissions by manual build in the HealtheIntent tool or be automated transmission through RESTful application program interfaces (APIs)</li> <li>Ensure User authentication</li> <li>Supply a federated identity provider software which supports either Security Assertion Marku Language (SAML) 2.0 or OpenID 2.0</li> </ul>
Deliverables	Cerner and Client will complete a Use Case Design workbook with agreed-upon use cases  Cerner will provide the following:  Executive status reports to track progress and risks for this implementation  Localized future-state workflows  2 train the trainer events technical training and content training  Maintenance training to the appropriate individuals around SAP BusinessObjects, Tableat and HealtheEDW tools  Access to standard training materials and online help pages  Online access to the application as well as to the Client-specific content page  Access to information sources such as community calls, illuminations, and uCern groups to connect the Client to solution and content information.
Project Assumptions	Number of hours included to configure and validate content: 200  Content development includes 200 hours to collaborate on creating a piece(s) of content the aligns with the Client's business needs as identified in Use Case Design  Cerner consulting engagement commencement is determined by the Client's readiness from strategy, data, and solution standpoint  Reports and dashboards provided may require further alteration and/or need localization based of the Client build to provide accurate data or as additional data sources are added on Once the reports have been created, altered, or localized, it is the Client's responsibility to validate the report data for accuracy  Devices must be capable of broadband internet connectivity and have appropriate processing an memory storage necessary for Web browsing  Availability of the acquired data will be contingent on the exposure of the content in the HealtheEDW table schema and in existing SAP BusinessObjects and Tableau metadata  Quality of reporting is dependent on the quality of source data  Client will receive training to be able to maintain any custom reports needed; Cerner is no responsible for maintaining Client custom reports and dashboards  Client will transition to support 30 days after activation of solution  Client will have access to support teams to assist with ongoing maintenance and questions



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# Cerner cerner sales order

# Fees associated with this Scope assume a single cycle of work from design to implementation. Client may purchase additional services at Cerner's then-current fees if additional services are requested. Client has contracted with Cerner for the Cerner HeeltheIntent platform master patient index service or has an enterprise master patient index service across disparate systems Client will join relevant Cerner-sponsored groups, community calls, and illuminations to stay up to date with solution and content advancements HealtheEDW includes the functionality that enables Client to syndicate data; if Client wishes to turn on this feature, additional set-up fees will apply

	CERNER HEALTHERECORD DEPLOYMENT
Cerner Responsibilities	Assist Client in achieving project readiness for strategy, data, and solution implementation     Evaluate data sources with Client to connect to the HealtheIntent platform     Manage and leverage project plan for events and activities associated with implementation     Guide Client through design decisions impacting features and workflows     Complete action items to assess current state identify improvement opportunities, and direct localization, testing, and implementation     Evaluate documentation practices to determine if data will be discrete and appropriate Complete internal validation of feature functionality and content prior to Client validation
Client Responsibilities	<ul> <li>Determine appropriate use case(s) and personnel for HealtheRecord access</li> <li>Identify the value objectives that the implementation is supporting</li> <li>Establish communication plan and deployment strategy</li> <li>Ensure governance support</li> <li>Provide use cases for solution</li> <li>Ensure resource availability and experience for design, training and implementation that aligns wit each proposed use case</li> <li>Perform validation activities</li> <li>Create training plan and train end users for initial implementation and subsequent end-user training</li> <li>Engage with other suppliers as necessary to provide data sources for Cerner HealtheIntent</li> <li>Establish any data use agreements between Client organization and data source entity</li> <li>Perform source data extract creation and ongoing maintenance surrounding data acquisition</li> <li>Ensure User authorization</li> <li>Maintain personnel/User access permissions by manual build in the HealtheIntent tool or be automated transmission through RESTful application program interfaces (APIs)</li> <li>Ensure User authentication</li> <li>Supply a federated identity provider software which supports either Security Assertion Marku Language (SAML) 2.0 or OpenID 2.0</li> </ul>
Deliverables	Cerner and Client will complete a design workbook with agreed-upon design decisions  Cerner will provide the following:  Executive status reports to track progress and risks for this implementation  Localized future-state workflows  Train the trainer to an agreed upon list of trainees



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	CERNER HEALTHERECORD DEPLOYMENT
	o Maintenance training to the appropriate individuals o Access to standard training materials and online help pages o Online access to the application as well as to the Client-specific content page o Access to information sources such as community calls, illuminations, and uCern groups which will connect the Client to solution and content information
Project Assumptions	<ul> <li>Cerner consulting engagement commencement is determined by the Client's readiness from a strategy, data, and solution standpoint</li> <li>Cerner will complete build in 1 production and 1 non-production domain if Cerner Millennium integration is utilized</li> <li>Devices must be capable of broadband internet connectivity and have appropriate processing and memory storage necessary for Web browsing</li> <li>Client will utilize necessary tools to create and maintain any custom reports needed; Cerner is not responsible for maintaining Client custom reports and dashboards</li> <li>Client will transition to support 30 days after activation of solution</li> <li>Client will have access to support teams to assist with ongoing maintenance and questions</li> <li>Fees associated with this Scope assume a single cycle of work from design to implementation. Client may purchase additional services at Cemer's then-current fees if additional services are requested.</li> <li>Client has contracted with Cemer for the Cerner HealtheIntent platform master patient index service or has an enterprise master patient index service across disparate systems</li> <li>Client will join relevant Cemer-sponsored groups, community calls, and illuminations to stay up to date with solution and content advancements</li> </ul>

### PROFESSIONAL SERVICES

	IMPLEMENTATION SERVICES		
Estimated Project Duration	Cerner requires a minimum of 90 days following the Effective Date to accommodate pre-project activities suc as planning, staffing, and technology activities. The overall duration of this project (from project kick-off to g live), based on the scope of services set forth in this Scope, is expected to be 78 weeks.		
Client_Project_Team	<ul> <li>Client will identify and make available its project team members within 90 days following the Effective Date α this Ordering Document or, if not identified and available within that timeframe, such delay will be considered a change in scope, and will require the execution of an Ordering Document setting forth the additional work effort and additional professional services fees.</li> </ul>		
	ORGANIZATIONAL CHANGE MANAGEMENT CONSULTING		
Cemar Responsibilities	<ul> <li>Provide Client's interdisciplinary team with information, content, tactics, and methodologies to help with adoption of Cerner solutions across Client's communities</li> </ul>		
	Collaborate with Client in applying Cerner's Communication, Leadership, Engagement, Alignment and Responsibility (CLEAR) methodologies, practices, and tactics to achieve organizational change goals		
	<ul> <li>Target measurable behavior change, conduct extensive analysis of needs and culture, help manage Clien transition change plan, and oversee its implementation</li> </ul>		
	Facilitate the following:		
	o Leadership workshop		
	<ul> <li>Provide an overview of Cemer's CLEAR change model and how it can aid in forming a powerfull leadership coalition prepared to lead transformational change in an adaptive environment</li> </ul>		
	s Governance effectiveness workshop		



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	IMPLEMENTATION SERVICES
The short War I, would see that property on the same	<ul> <li>Provide a forum for leaders to collaborate on establishing requisite structures, charters, tools communications and personnel associated change initiatives</li> </ul>
	o Governance validation workshop
	<ul> <li>Assess and validate completeness, efficiency and effectiveness of the governance process, while also identifying associated fisks and or mitigations</li> </ul>
	g Change network and communication workshop
	<ul> <li>Review key change roles and structures to support and drive change</li> </ul>
	o Executive alignment workshop
	Conduct values planning and commitment days sessions
	<ul> <li>Assist Client with establishing a sustainable Project Governance structure including:</li> </ul>
	<ul> <li>Aiding Client in creating governance structures and charters based on Cerner's CLEAR best practices</li> </ul>
	Attending periodic governance sessions once structures and charters are created to evaluate use of recommended best practices.
	o Report governance status to Executive Steering Committee.
	Assist Client with creation of Communication Plan including:
	o An organizational and project-focused communication plan and subsequent delivery methods to suppoundates to the organization and community on goals, progress, and other implementation components
	Conduct Department Manager Meeting including
	<ul> <li>Conducting on-site department manager kickoff meeting designed to engage department leaders and/t/ clinic managers early in the project to build awareness, create commitment and provide tools an resources</li> </ul>
	Provide Advisory Consulting including
	o Collaborating with Client on implementing strategies and tactics per the CLEAR change plan to operationalize ongoing process and sustainment of change management
	o Identifying risks to sustaining adoption of new practices
	o Outlining an adoption sustainment plan throughout the implementation life cycle
Project Assumptions	Cerner and Client will collaborate and mutually agree upon advisory consultant schedule
	<ul> <li>All requested modifications to this Scope must be evaluated for potential impact to the project plan and mare result in a longer project timeline, additional Cerner or Client work, and additional fees set forth in a separal Sales Order</li> </ul>
End	ORGANIZATIONAL CHANGE MANAGEMENT ASSESSMENT
Project Assumptions	The Organizational Change Management Assessment (OCMA) is conducted during the Current State Review with the findings presented as part of the Leadership Alignment Event. The OCMA is conducted by a Cernic Change Management Consultant and consists of an organizational diagnosis that improves the Client's abilit to create an organizational change campaign to influence behaviors and realize benefits. The assessment results in the development of a behavior change plan, inclusive of motivation, communication and learning tactics tallored for the Client's approach to end-user adoption.



West Virginia Department of Health & Human Resources Bureau 1-8CHCV7R January 17, 2020

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(type or print)		Teresa Waller
Title:	Title	Sr. Director, Contract Management
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## ATTACHMENT L: ADDITIONAL ATTACHMENTS

Attachment Title	Tab Number
Appendix 1 – Detailed Specifications	1
Draft Initial Staffing Plan	2
Initial Work Plan	3



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### Instructions for completion of Appendix 1 - Detailed Specifications

- The Vendor should self-score each requirement listed in the Capability Assessment column of Tab 3 Specification & Responses, using only the values that appear in the drop-down list.
- 2. Capability Assessment values are outlined below:
  - 1. "Will Meet": Vendor agrees to specification.
  - 2. Will Not Meet": Vendor declines to meet the specification.
- 3. All specifications should contain one of the values identified above. Any specification without a *Capability Assessment* response value will be considered to be "Will Not Meet."
- 4. In addition, the Vendor should provide the *Attachment, Section*, and *Page Number(s)* where their detailed narrative response for each specification resides, providing the DHHR with a crosswalk, ensuring that each specification is addressed. Be advised that the column has been pre-populated with the location that the DHHR anticipates the requirement response to reside, however it is up to the Vendor to update that column accordingly should the Vendor respond to a requirement in a different location.
- 5. Hierarchy Level: The hierarchy level column defines relationships between parent and child specifications. DHHR refers to parent specifications as specifications that rely on the content of a subset of related specifications (children) to fully define the scope of the requirement. DHHR refers to child specifications as specifications that rely on additional context provided by a higher level specification (parent) to fully define the scope of the specification. A hierarchy value of 1 denotes the highest level specification. Any greater hierarchy value denotes a child specification. For example a hierarchy level 2 is a child to the nearest prior hierarchy level 1. As another example, a hierarchy level 3 is a child to the nearest prior hierarchy level 2 specification, which is in turn a child to the nearest prior hierarchy level 1 specification. See the diagram below for an illustration of a hierarchy relationship:
  - -Hierarchy Level 1 Specification
    -Hierarchy Level 2 Specification



		Tabs in this spreadsheet	
Worksheet Instructions	Instructions for complet		
2. Worksheet Information	This tab including the in	formation about the contents of this workbook.	
3. Specification & Responses	Contains the specification		
4. Code Values	Contains coded values for	or use in the specifications tab, and explanations as appropriate.	
		Columns on the specification Responses Tab	
Section	Column	Description	Corresponding Code Values
	Req ID#	The unique ID of the specification.	N/A
pecifications	Specification Text	The text of the specification.	N/A
Subject Matter Area	N/A	How the specification is categorized in the RFP	N/A
	Capability Assessment	Vendor is expected to indicate their compliance with the specification using one of the supplied values.	Vendor Response - Capability Assessment
Vendor Response Area	Attachment	Vendor is expected to provide a reference to the appropriate where more detailed information about the specification can be found. The expected template is identified for Vendor convenience.	Attachments
	Section and Page Reference	Vendor is expected to provide a reference to the appropriate Section and Page Number within the specified Attachment where more detailed information about the specification can be found.	N/A





		Specifications			Vendor R	esponse	
Reg ID II.	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
CM001	1	The solution should have the ability to collect and maintain data necessary to support budget neutrality reporting requirements as specified by the Centers for Medicare & Medicaid Services (CMS) and the Department.	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	16
CM002	1	The solution should have the ability to generate fee-for-service (FFS) claims reporting for services furnished outside of a capitation agreement including, but not limited to: services carved out of the managed care program.	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	10
CM003	1	The solution should have the ability to capture and support analytics of data on member service utilization including, but not limited to:	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	16
CM004	2	Behavioral health services	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	16
CM005	2	Medical services	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	16
CM006	2	Dental services	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	16
CM007	2	Pharmacy services	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	16
CM008	2	Others as defined by the Department	Care Management	Will Meet	Attachment G - Business	1. Care Management	16
M009	1	The solution should have the ability to track the number of members assigned to providers.	Care Management	Will Meet	Specifications Approach Attachment G - Business Specifications Approach	1. Care Management	16
M010	1	The solution should have the ability to capture provider data including, but not limited to:	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	16
M011	2	Provider identification (ID) number	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	16
M012	2	Provider type	Care Management	Will Meet	Attachment G - Business Specifications Approach	1 Care Management	16
M013	2	Provider specialty	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	16
M014		Provider affiliation	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	16
M015		Provider physical address	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	16
M016			Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	169
M017	2	Others as defined by the Department	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	17



		Specifications			Vendor Re	sponse	
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
CM018	1	The solution should have the ability to track a provider's capacity to accept additional members.	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	170
CM019	1	The solution should have the ability to identify providers based on provider type and/or specialty.	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	170
CM020	1	The solution should have the ability to capture and support analytics of data for cost reporting and financial monitoring of waiver programs.	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	170
CM021	1	The solution should have the ability to capture current and historic utilization trends including, but not limited to:	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	170
CM022	2	Inpatient specialty care	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	170
CIM023	2	Inpatient substance use disorder (SUD) services	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	171
CM024	2	Others as defined by the Department	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	171
CM025	1	The solution should have the ability to develop metrics to support the evaluation and monitoring of substance use disorder (SUD) including, but not limited to:	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	171
CIM026	2	Using claims and/or encounter data	Care Management	Will Meet	Attachment G - Business Specifications Approach	1 Care Management	171
CM027	2	Using prescription data	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	171
CM028	2	Using Prescription Drug Monitoring Program data	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	172
CM029	2	Using public health registries	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	172
CM030	2	Using public health syndromic surveillance data	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	172
CM031	2	Using vital statistics data	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	172
CM032	2	Using enrollment data	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	173
CIM033	2	Using data from West Virginia Health Information Network (WVHIN)	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	173
CM034	2	Using Emergency Department Information Exchange (EDIE), and/or event notification data	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	173





		Specifications			Vendor R	esponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
CM035	2	Using other data as defined by the Department	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	173
СМО36	1	The solution should have the ability to generate reports on capitation payment by eligibility group and rate code.	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	173
СМ037	1	The solution should have the ability to capture information on contracted Managed Care Organizations (MCOs) including, but not limited to:	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	174
CM038	2	Geographic areas served	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	174
CM039	2	Capitation rates	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	174
CM040	1	The solution should have the ability to produce managed care program reports including, but not limited to:	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	174
CM041	2	Category of service	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	175
CM042	2	Category of eligibility	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	175
CM043	2	Provider type and/or specialty	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	175
CM044	2	Other parameters as defined by the Department	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	175
CM045	1	The solution should have the ability to process encounter data to detect overutilization and underutilization of services by managed care members.	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	175
CM046	1	The solution should have the ability to collect and sort encounter data for use in setting capitation rates.	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	176
CM047	1	The solution should have the ability to identify fee-for-service (FFS) claims submitted for members covered by managed care.	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	176
CM048	1	The solution should have the ability to use claims and encounter data to identify persons with special health care needs, as specified by the Department.	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	176
CM049	1	The solution should have the ability to access and report on encounter data including, but not limited to:	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	176
CM050	2	Monitor appropriateness of care	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	176
CM051	2	Determine shared member financial responsibility that includes true out-of-pocket costs	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	177



		Specifications			Vendor Re	esponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page II
CM052	2	Profile Managed Care Organizations (MCOs) and compare utilization statistics	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	177
CM053	2	Other purposes as defined by the Department	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	177
CM054	1	The solution should have the ability to support analytics of fee- for-service (FFS) claims statistics and encounter data including, but not limited to:	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	177
CM055	2	Timeliness of care	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	177
СМ056	2	Quality of care	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	178
CM057	2	Patient outcomes	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	178
CM058	1	The solution should have the ability to receive population health data from various external entities including, but not limited to:	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	178
CM059	2	Public health surveillance data	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	178
CM060	2	Census data	Care Management	Will Meet	Attachment G - Business Specifications Approach	1 Care Management	178
CM061	2	Vital statistics data	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	179
CM062	2	Others as defined by the Department	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	179
CM063	1	The solution should have the ability to interface with data sources necessary to support analytics and report on social determinants of health.	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	179
CM064	1	The solution should have the ability to support analytics of population health data to develop health improvement communication materials including, but not limited to:	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	180
CM065	2	Campaigns to enroll new members in existing programs	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	180
CIM066	2	New programs and services	Care Management	Will Meet	Attachment G - Business Specifications Approach	1 Care Management	180
CM067	2	Updated benefits/reference information	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	181
CM068	2	Others as defined by the Department during Design, Development and Implementation (DDI)	Care Management	Will Meet	Attachment G - Business Specifications Approach	1 Care Management	181





		Specifications			Vendor R	esponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
CM069	1	The solution should have the ability to capture each Managed Care Organizations' (MCOs') provider data including, but not limited to:	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	18.
CM070	2	Provider identification (ID) number	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	18:
CM071	2	Provider type	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	18:
CM072	2	Provider specialty	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	181
CM073	2	Provider affiliation	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	181
CM074	2	Provider physical address	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	181
CM075	2	Provider mailing address	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	181
CM076	2	Others as defined by the Department	Care Management	Will Meet	Attachment G - Business Specifications Approach	1. Care Management	181
D <b>D001</b>	1	The solution should have the analytic ability to report benchmark dimensions and commonalities.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	285
D <b>D00</b> 2	1	The solution should provide documentation of all data objects and codes, abbreviations, and descriptions in logical and physical data models in a searchable, approved, current online data dictionary.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	285
DD003	1	The solution should provide documentation of all data objects and codes, abbreviations, and descriptions in logical and physical data models in a searchable, approved, current online entity relationship (ER) diagram.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	286
DD004	1	The solution's data modeling tool should have current and historical versions available upon request.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	287
DD <b>00</b> 5	1	The solution should have the ability to detect, maintain, and analyze both predetermined and authorized solution user - created relationships among claims, persons, providers, and other entities.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	287
D <b>D00</b> 6	1	The Vendor should maintain synchronization of claims and encounter record dates with provider and member record dates (a claim or encounter is always linked to the provider status and member status segments associated with the date of service).	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	287
DD007	1	The solution should have the ability to produce multi- dimensional data objects including, but not limited to:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	288
800dc	2	Data cubes	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,  Delivery, and Display	288

WV\_115\_Appendix 1 NEW - Detailed Specifications\_Clean\_12-4-19

Tab 3. Specifications & Responses



		Specifications			Vendor Re	sponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page II
D <b>D00</b> 9	2	Customized tables	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	288
DD010	2	Data marts	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	288
DD011	2	Materialized views	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	288
DD012	2	And to develop, implement, and maintain both derived and aggregated data including, but not limited to:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	289
DD013	3	Total claim costs	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	289
DD014	3	Unique member counts	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	289
DD015	3	Units of service	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	289
DD016	3	Benchmarks	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	289
DD017	1	The solution should maintain current and historical data.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	290
DD018	1	The solution should maintain current and historical claim data including, but not limited to:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	290
D <b>D</b> 019	2	Date of payment	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	290
DD020	2	Date of adjudication	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	290
DD021	2	Prescription date	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	290
DD022	2	Date of service	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	290
DD023	1	The solution should develop and maintain standard table joins that allow linkages among member records, provider records, claim/encounter records, and all other solution data to enhance querying, reporting, and analytics.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	290
DD024	1	The solution should have the ability to receive and accept interfaces and exchange data with government agencies, data vendors, industry groups, providers, insurers, and health information exchanges as designated by the Department.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	291
DD025	1	The solution should have the ability to assign a single unique identifier to all members, providers, and claims received from all data sources.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	291





		Specifications .		Vendor Response				
Red ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #	
DD026	1	The solution should have the ability to automatically identify duplicative members, providers, and/or claims- related information received from a single or multiple source(s), and merge that information into a single record.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	29	
DD027	1	The solution should have the ability to schedule interfaces and data exchanges.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	29	
DD028	1	The solution's interface processing should not adversely affect other activities, such as regular operations, other jobs, reporting, queries, analytics, research, and extract, transform, load (ETL).	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Delivery, and Display     Delivery, and Display	29	
DD029	24	The solution should have the ability to validate that all files meet the extract, transform, load (ETL) edit standards prior to entering the production database, such that any files or content failing to meet standards are returned to the originator and flagged for review.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	29	
DD030	1	The solution interface design and Interface Control Document should be extensible, scalable, and adjustable to work with business and technology changes.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	29	
DD031	1	The solution should have the ability to incorporate new data sources and changes to existing data sources as part of routine maintenance.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	293	
DD032	1	The solution should have the ability to ensure the data conversion and extract, transform, load (ETL) processes adhere to the standards and guidelines of the Health Insurance Portability and Accountability Act (HIPAA), Centers for Medicare & Medicaid Services (CMS), Medicaid Information Technology Architecture (MITA), National Institute of Standards and Technology (NIST), and other government and industry standards guiding secure, consistent, accurate, and efficient data exchange.		Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	29	
DD033	1	The Vendor should coordinate with the Department and maintain a schedule that documents when data is expected, when it is received, when it is processed by extract, transform, load (ETL), and when it is loaded to the data warehouse tables and database objects.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	293	
D034	1	The Vendor should ensure the solution components that are web based have cross-browser compatibility over the life of the contract and support software utilization in the current version and two (2) prior versions at a minimum for the following browsers including, but not limited to:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	294	



		Specifications			Vendor Re	sponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
DD035	2	Microsoft	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	294
DD036	2	Apple products	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,  Delivery, and Display	294
DD037	2		Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	294
DD038	2	Firefox	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	294
DD039	2	Internet Explorer (IE 7 or greater)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	294
DD040		<del>Deleted</del>		Will Meet		Delivery, and Display	294
DD041	1	The solution should support non-linear "undo" ability to ensure any action performed at any time in a single work session within a given component can be reverted to a former state.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	294
 DID042	1	The solution should have the ability to support Windows-based or similar shortcuts including, but not limited to:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	294
DD043	2	Ctrl+c for copy	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	294
DD044	2	Ctrl+v for paste	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	294
DD045	2	Ctrl+z for undo	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	295
DD046	1	The solution should provide electronic audit trails for every interface file input when received, when processed by extract, transform, load (ETL), and when loaded to table(s).	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	295
DD047	1	The solution should have the ability to revert to a previous version when an implemented change causes an undesirable solution impact, within a timeframe determined by the Department.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	295
DD048	1	The solution should have the ability to associate clinical data with the claim record.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	295
DD049	1	The solution should have the ability to view activities during integration such as job schedules, job times and load processing.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	295
DD050	1	The solution should have the ability to store and analyze semi- structured and unstructured data, such as case notes	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	296
DD051	1	The solution should have the ability to analyze and report on data integration audit logs.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	296
DD052	1	The solution should define a hierarchy to resolve conflicts between the same data elements from different sources.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	296



		Specifications			Vendor Response				
Reg ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Sestion	Page #		
DD053	1	The solution should have the ability to accept data in a variety of formats from different sources and standardize.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	296		
DD054	1	The solution should have the ability to identify, correct, and report data quality/defect issues.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	297		
DD055	1	The solution's development environment should have the capacity to support all components of the solution.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	297		
DD056	1	The solution's environments should have the ability to handle scheduled or on-demand requests to refresh data with a referentially intact subset of data.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	297		
DD057	1	The solution should have a production environment that is used to deploy the solution.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	297		
DD058	1	The solution's production environment should have the ability to support all components of the solution.	Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	297		
DD059	1	The solution should contain a data access component that serves as a central access point for authorized solution users.	Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	298		
DD060	1	The solution's data model component should be maintained in an open systems modeling tool that can generate reports.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	298		
DD061	1	The solution's data model component should be maintained in an open systems modeling tool that can enforce object-naming standards.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	299		
D <b>D</b> 062	1	The solution's data model component should be maintained in an open systems modeling tool that can import and export metadata.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	299		
DD063	1	The solution's data model component should be maintained in an open systems modeling tool that can provide version control of logical and physical data models.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	299		
DD064	1	The solution's data model component should be maintained in an open systems modeling tool that can provide forward- engineering abilities.	Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	300		
DD065	1	The solution's data model component should be maintained in an open systems modeling tool that can provide reverse-engineering abilities.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	300		
DD066	1	The solution's data model component should be maintained in an open systems modeling tool that can support volumetric calculation abilities.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	300		
DD067	1	The solution's data model component should be maintained in an open systems modeling tool that can support comparison abilities for different logical and physical data model versions.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	301		
DD068	1	The solution's data delivery component should maintain the following information related to the authorized solution user: acknowledgement of data extraction.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	301		

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Tab 3. Specifications & Responses



		Specifications			Vendor Re	sponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
DD069	1	The solution's data delivery component should maintain the following information related to the authorized solution user:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	301
DD070	2	Receipt of data	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	301
<b>DD</b> 071	2	Data elements requested	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	301
DD072	2	Selection criteria for extraction	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	301
DD073	2	Method of export	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	301
DD074	2	Others as defined by the Department	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	301
DD075	1	The solution's data delivery component should have the ability to extract the data in all industry-accepted formats including, but not limited to:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	301
DD076	2	Excel	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	302
DD077	2	Joint Photographic Experts Group (JPEG)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	302
DD078	2	Others as requested by the Department	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	302
DD079	2	Word	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	302
DD080	2	Hyper Text Markup Language (HTML)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	302
DD081	2	Software and Services (SAS)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	302
DD082	2	Graphical User Interface (GUI)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	302
DD083	2	Extensible Markup Language (XML)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	302
DD084	2	Application Programming Interface (API)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	302
DD085	2	Text	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	302
DD086	2	Comma-Separated Value (CSV)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	302
DD087	2	Delimited text	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	302
DD088	2	Portable Document Format (PDF)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	303





		Specifications			Vendor R	esponse	
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page π
OD089	12	The solution's data delivery component should maintain details of requests, including time stamp, duration, and volume of data extracted.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	303
DD090	1	The solution should have the ability to schedule data extraction based on time or occurrence of events.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	303
DD091	1	The solution should have the ability to delete/clean up extracted data sets.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	303
DD092	1	The solution should have the ability to extract proportionally large volumes of data based on specified selection criteria.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	303
DD093	1	The solution should have the ability to monitor and control data extraction requests.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	303
D <b>D09</b> 4	1	The solution should have the ability to send automatic alerts to authorized solution users when errors occur during the data delivery process and other user interaction processes.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	303
DD <b>0</b> 95	1	The solution should have the ability to notify the authorized solution user as to the details of the extract, including estimated duration and size.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	303
D <b>D0</b> 96	1	The solution should have the ability to generate reports with summary and detail information on data delivery requests, executions, and other authorized solution user interaction processes.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	304
DD <b>09</b> 7	1	The solution should have the ability for authorized solution users to request, develop, and/or schedule dataset creation and monitor the status.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	304
D <b>D0</b> 98	1	The solution should have the ability to perform structural transformations against source data including, but not limited to:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	304
D <b>D09</b> 9	2	Summarization	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	305
DD100	2	Partitioning	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	305
DD101	2	Normalization	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	305
DD102	2	Consolidation	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	305
D <b>D1</b> 03	2	Filtering	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	305
DD104	2	Derivation	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	305
D <b>D10</b> 5	2	Others as defined by the Department	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	305



		Specifications			Vendor Re	sponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	'Section'	Page #
DD106	1	The solution should have the ability to provide a development environment in which the logic for slowly-changing entity relationships can be quickly and accurately written.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	305
<b>DD</b> 107	1	The solution should have the ability for authorized solution users to quickly and accurately write query logic for complex entity relationships.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	306
DD108	1		Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	306
DD109	1	The solution should have the ability to produce maps with both cartographic representation and global satellite imagery.	Data Sources, Delivery, & Display	Wili Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	306
DD110	1	The solution should have the ability to allow authorized solution users to create and/or select the type of map image they prefer to view, print or edit.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	306
DD111	1	The solution should have the ability to permit an authorized solution user to select and navigate information to be displayed on maps in a pop-up to highlight information about a location, including charts and graphs, photos, and other information as requested by the Department.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	306
DD112	1	The solution should have the ability to resize and print all reports and maps within the solution.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	306
DD113	1	The solution should have the ability to create and display legends, documentation, and data on reports and maps.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	307
DD114	1	The solution should support a query editor that provides editing, execution, and debugging functionality.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	307
<b>DD</b> 115	1	The solution should have the ability to access external plan data via the Application Programming Interface (API).	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	307
DD116	1	The solution should provide a rules engine that utilizes technical	Data Sources, Delivery, &	Will Meet	Attachment H - Technical	1. Data Sources,	307
DD117	1	The solution should have the ability to add, test, and implement new source-to-target mappings at the Department's request.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	307
DD118	1	The solution should have an extract, transform, load (ETL) data acquisition component with a development environment that has the ability to build and deploy new source/target combinations within the solution.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	308
DD119	1	The solution should have an extract, transform, load (ETL) data acquisition component that supports automated impact analyses against the ETL code base.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	309
DD120	1	The solution should have an extract, transform, load (ETL) data acquisition component that supports the versioning of ETL modules.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	309



		Specifications			Vendor Response				
Reg ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Sestion	Page #		
DD053	1	The solution should have the ability to accept data in a variety of formats from different sources and standardize.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	296		
DD054	1	The solution should have the ability to identify, correct, and report data quality/defect issues.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	297		
DD055	1	The solution's development environment should have the capacity to support all components of the solution.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	297		
DD056	1	The solution's environments should have the ability to handle scheduled or on-demand requests to refresh data with a referentially intact subset of data.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	297		
DD057	1	The solution should have a production environment that is used to deploy the solution.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	297		
DD058	1	The solution's production environment should have the ability to support all components of the solution.	Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	297		
DD059	1	The solution should contain a data access component that serves as a central access point for authorized solution users.	Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	298		
DD060	1	The solution's data model component should be maintained in an open systems modeling tool that can generate reports.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	298		
DD061	1	The solution's data model component should be maintained in an open systems modeling tool that can enforce object-naming standards.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	299		
D <b>D</b> 062	1	The solution's data model component should be maintained in an open systems modeling tool that can import and export metadata.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	299		
DD063	1	The solution's data model component should be maintained in an open systems modeling tool that can provide version control of logical and physical data models.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	299		
DD064	1	The solution's data model component should be maintained in an open systems modeling tool that can provide forward- engineering abilities.	Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	300		
DD065	1	The solution's data model component should be maintained in an open systems modeling tool that can provide reverse-engineering abilities.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	300		
DD066	1	The solution's data model component should be maintained in an open systems modeling tool that can support volumetric calculation abilities.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	300		
DD067	1	The solution's data model component should be maintained in an open systems modeling tool that can support comparison abilities for different logical and physical data model versions.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	301		
DD068	1	The solution's data delivery component should maintain the following information related to the authorized solution user: acknowledgement of data extraction.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	301		

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Tab 3. Specifications & Responses



		Specifications			Vendor Re	sponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
DD069	1	The solution's data delivery component should maintain the following information related to the authorized solution user:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	301
DD070	2	Receipt of data	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	301
<b>DD</b> 071	2	Data elements requested	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	301
DD072	2	Selection criteria for extraction	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	301
DD073	2	Method of export	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	301
DD074	2	Others as defined by the Department	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	301
DD075	1	The solution's data delivery component should have the ability to extract the data in all industry-accepted formats including, but not limited to:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	301
DD076	2	Excel	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	302
DD077	2	Joint Photographic Experts Group (JPEG)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	302
DD078	2	Others as requested by the Department	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	302
DD079	2	Word	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	302
DD080	2	Hyper Text Markup Language (HTML)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	302
DD081	2	Software and Services (SAS)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	302
DD082	2	Graphical User Interface (GUI)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	302
DD083	2	Extensible Markup Language (XML)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	302
DD084	2	Application Programming Interface (API)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	302
DD085	2	Text	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	302
DD086	2	Comma-Separated Value (CSV)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	302
DD087	2	Delimited text	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	302
DD088	2	Portable Document Format (PDF)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	303





	Specifications			Vendor Response				
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page π	
OD089	12	The solution's data delivery component should maintain details of requests, including time stamp, duration, and volume of data extracted.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	303	
DD090	1	The solution should have the ability to schedule data extraction based on time or occurrence of events.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	303	
DD091	1	The solution should have the ability to delete/clean up extracted data sets.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	303	
DD092	1	The solution should have the ability to extract proportionally large volumes of data based on specified selection criteria.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	303	
DD093	1	The solution should have the ability to monitor and control data extraction requests.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	303	
D <b>D09</b> 4	1	The solution should have the ability to send automatic alerts to authorized solution users when errors occur during the data delivery process and other user interaction processes.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	303	
DD <b>0</b> 95	1	The solution should have the ability to notify the authorized solution user as to the details of the extract, including estimated duration and size.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	303	
D <b>D0</b> 96	1	The solution should have the ability to generate reports with summary and detail information on data delivery requests, executions, and other authorized solution user interaction processes.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	304	
DD <b>09</b> 7	1	The solution should have the ability for authorized solution users to request, develop, and/or schedule dataset creation and monitor the status.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	304	
D <b>D0</b> 98	1	The solution should have the ability to perform structural transformations against source data including, but not limited to:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	304	
D <b>D09</b> 9	2	Summarization	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	305	
DD100	2	Partitioning	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	305	
DD101	2	Normalization	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	305	
DD102	2	Consolidation	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	305	
D <b>D1</b> 03	2	Filtering	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	305	
DD104	2	Derivation	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	305	
D <b>D10</b> 5	2	Others as defined by the Department	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	305	



		Specifications			Vendor Re	sponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	'Section'	Page #
DD106	1	The solution should have the ability to provide a development environment in which the logic for slowly-changing entity relationships can be quickly and accurately written.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	305
<b>DD</b> 107	1	The solution should have the ability for authorized solution users to quickly and accurately write query logic for complex entity relationships.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	306
DD108	1		Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	306
DD109	1	The solution should have the ability to produce maps with both cartographic representation and global satellite imagery.	Data Sources, Delivery, & Display	Wili Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	306
DD110	1	The solution should have the ability to allow authorized solution users to create and/or select the type of map image they prefer to view, print or edit.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	306
DD111	1	The solution should have the ability to permit an authorized solution user to select and navigate information to be displayed on maps in a pop-up to highlight information about a location, including charts and graphs, photos, and other information as requested by the Department.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	306
DD112	1	The solution should have the ability to resize and print all reports and maps within the solution.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	306
DD113	1	The solution should have the ability to create and display legends, documentation, and data on reports and maps.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	307
DD114	1	The solution should support a query editor that provides editing, execution, and debugging functionality.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	307
<b>DD</b> 115	1	The solution should have the ability to access external plan data via the Application Programming Interface (API).	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	307
DD116	1	The solution should provide a rules engine that utilizes technical	Data Sources, Delivery, &	Will Meet	Attachment H - Technical	1. Data Sources,	307
DD117	1	The solution should have the ability to add, test, and implement new source-to-target mappings at the Department's request.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	307
DD118	1	The solution should have an extract, transform, load (ETL) data acquisition component with a development environment that has the ability to build and deploy new source/target combinations within the solution.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	308
DD119	1	The solution should have an extract, transform, load (ETL) data acquisition component that supports automated impact analyses against the ETL code base.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	309
DD120	1	The solution should have an extract, transform, load (ETL) data acquisition component that supports the versioning of ETL modules.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	309





		Specifications		Vendor Response				
Reg ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #	
DD121	1	The solution should have an extract, transform, load (ETL) data acquisition component that has the ability to create ETL functions using pre-packaged transformation objects.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	309	
D <b>D122</b>	1	The solution should have an extract, transform, load (ETL) data acquisition component that has the ability to design, develop, and implement reusable ETL processes for transformation, exception/error handling, audit and control, and balancing.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	310	
D <b>D1</b> 23	1	The solution should have an extract, transform, load (ETL) data acquisition component that has the ability to enter documentation from system level down to individual code line and includes a run-time debugger.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	310	
DD124	1	The solution should have an extract, transform, load (ETL) data acquisition component that has the ability to provide automatic and manual caching control to balance quick response with scalability.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	310	
D <b>0125</b>	1	The solution's extract, transform, load (ETL) data acquisition component should populate summarized, aggregated structures based on detail data changes in the timeframe of the detail refresh window using both set-based and procedural constructs.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	311	
DD126	1	The solution's extract, transform, load (ETL) data acquisition component should have the ability to acquire, transform, and load proportionally large data volumes to obtain the current volume of source data.	Data Sources, Delivery, & Display	Will Meet .	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	311	
D <b>D12</b> 7	1	The solution's extract, transform, load (ETL) tool should have a data acquisition component that performs a timely data refresh from sources outlined in the Enterprise Data Solution (EDS) Request for Proposal (RFP) for each development phase indicated.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	311	
DD128	1	The solution's extract, transform, load (ETL) data acquisition component should populate internal analytic applications that are specifically required or proposed as part of the solution.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	311	
D <b>D129</b>	1	The solution's extract, transform, load (ETL) data acquisition component should have the ability for multiple authorized solution users to work on single or multiple tasks, reports, and/or projects concurrently.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	311	
DD130	1	The solution's extract, transform, load (ETL) data acquisition component should support ease in promotion of code from one environment to another.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	311	





		Specifications		Vendor Response				
Reg ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #	
DD121	1	The solution should have an extract, transform, load (ETL) data acquisition component that has the ability to create ETL functions using pre-packaged transformation objects.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	309	
D <b>D122</b>	1	The solution should have an extract, transform, load (ETL) data acquisition component that has the ability to design, develop, and implement reusable ETL processes for transformation, exception/error handling, audit and control, and balancing.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	310	
D <b>D1</b> 23	1	The solution should have an extract, transform, load (ETL) data acquisition component that has the ability to enter documentation from system level down to individual code line and includes a run-time debugger.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	310	
DD124	1	The solution should have an extract, transform, load (ETL) data acquisition component that has the ability to provide automatic and manual caching control to balance quick response with scalability.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	310	
D <b>0125</b>	1	The solution's extract, transform, load (ETL) data acquisition component should populate summarized, aggregated structures based on detail data changes in the timeframe of the detail refresh window using both set-based and procedural constructs.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	311	
DD126	1	The solution's extract, transform, load (ETL) data acquisition component should have the ability to acquire, transform, and load proportionally large data volumes to obtain the current volume of source data.	Data Sources, Delivery, & Display	Will Meet .	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	311	
D <b>D12</b> 7	1	The solution's extract, transform, load (ETL) tool should have a data acquisition component that performs a timely data refresh from sources outlined in the Enterprise Data Solution (EDS) Request for Proposal (RFP) for each development phase indicated.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	311	
DD128	1	The solution's extract, transform, load (ETL) data acquisition component should populate internal analytic applications that are specifically required or proposed as part of the solution.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	311	
D <b>D129</b>	1	The solution's extract, transform, load (ETL) data acquisition component should have the ability for multiple authorized solution users to work on single or multiple tasks, reports, and/or projects concurrently.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	311	
DD130	1	The solution's extract, transform, load (ETL) data acquisition component should support ease in promotion of code from one environment to another.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	311	



		Specifications .			Vendor Re	sponse	
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
DD131	1	The solution's extract, transform, load (ETL) data acquisition component should have the ability for high-speed movement of data between source and target systems located on the network.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	312
DD132	1	The solution's extract, transform, load (ETL) tool should have extraction functionalities that can unload, select, or filter data from source systems including the application of remote filters against the source.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	312
DD133	1	The solution's extract, transform, load (ETL) tool should have extraction functionalities that can deliver transparent, cross-platform access to remote data sources.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	312
DD134	1	The solution's extract, transform, load (ETL) tool should have extraction functionalities that can efficiently process varying arrays and repeating groups.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	312
DD135	1	The solution's extract, transform, load (ETL) tool should have extraction functionalities that can receive data from a variety of source systems and formats of source data.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	312
DD136	1	The solution's extract, transform, load (ETL) tool should have data checks and edit procedures in response to data quality issues identified in source systems and internal analytic applications.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	313
DD137	1	The solution's extract, transform, load (ETL) tool should have the ability to perform both set-based and procedural checks and edit procedures based on the Department's data quality objectives.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	313
DD138	1	The solution's extract, transform, load (ETL) tool should have the ability to perform all demographic field check and edit procedures.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	313
DD139	1	The solution's extract, transform, load (ETL) tool should have the ability to apply complex data mapping and domain value conversions against source data.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	314
DD140	1	The solution's extract, transform, load (ETL) tool should have the ability to perform an initial one-time data load from sources outlined in the Enterprise Data Solution (EDS) Request for Proposal (RFP) for each indicated development environment.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	314
DD141	1	The solution's extract, transform, load (ETL) tool should have the ability to geocode subject area addresses.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	314
DD142	1	The solution's extract, transform, load (ETL) tool should have the ability for high-speed movement of data between source and target systems on the network.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	314





		Specifications		Vendor Response				
Reg ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #	
D <b>D1</b> 43	1	The solution's extract, transform, load (ETL) tool should have the ability to efficiently load proportionally large data volumes.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	314	
DD144	1	The solution's extract, transform, load (ETL) tool should have the ability to schedule and monitor transformation jobs/sessions to populate internal analytic applications.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	315	
D <b>D14</b> 5	1	The solution's extract, transform, load (ETL) tool should have the ability to create complex job streams with interdependencies.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	315	
DD146	1	The solution's extract, transform, load (ETL) tool should have the ability to re-route error or exception records to a separate target for future interrogation.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	315	
DD147	1	The solution's extract, transform, load (ETL) tool should have the ability to correct data and subsequently re-submit corrected data to the ETL process.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	31.5	
D <b>D1</b> 48	1	The solution's extract, transform, load (ETL) tool should have the ability to reports results of an ETL session, including automatic notification of normal processing and failures, descriptions, and counts of exceptions.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	315	
DD149	1	The solution's extract, transform, load (ETL) tool should have the ability to generate and manage notifications and alerts, including how the alerts are registered, logged, and to whom they were posted.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	316	
D <b>D1</b> 50	1	The solution's extract, transform, load (ETL) tool should have the ability to tune ETL process steps	Data Sources, Delivery, &	Will Meet	Attachment H - Technical	1. Data Sources,	316	
D <b>D151</b>	1		Display  Data Sources, Delivery, &  Display	Will Meet	Specifications Approach Attachment H - Technical Specifications Approach	Delivery, and Display  1. Data Sources, Delivery, and Display	316	
DD152	1	The solution's extract, transform, load (ETL) tool should have the ability to recover from the abnormal ending of a job and restart or rollback.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	316	
DD153	1	The solution's extract, transform, load (ETL) tool should have the ability to create complex job schedules with both serial and parallel streams.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	316	
D <b>D15</b> 4	1	The solution's extract, transform, load (ETL) tool should have the ability to initiate jobs based on time or occurrence of events.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	316	
D <b>D155</b>	1	The solution's extract, transform, load (ETL) tool should have the ability to create log files that are detailed enough to debug Issues.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Dellvery, and Display	317	



	The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, including source definitions.  The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, including target definitions.  The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, including database mapping(s).  The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and			Vendor Response				
Reg ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #	
DD156	1	ability to generate, store, search, report, import, export, and	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources, Delivery, and Display	317	
DD157	1	ability to generate, store, search, report, import, export, and	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	317	
DD158	1	ability to generate, store, search, report, import, export, and document ETL-generated metadata, including database	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	318	
DD159	1	The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	318	
DD160	1	The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, including transformations.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	319	
DD161	1	The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, including data dependency analysis.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	320	
DD162	1	The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, including process flows.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	320	
DD163	1 .	The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, including operational statistics.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	320	
DD164	1	The solution's extract, transform, load (ETL) tool should have the ability to generate, store, search, report, import, export, and document ETL-generated metadata, and store metadata in an open format	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	320	
DD165	1	The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that versions the stored metadata content.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	320	





		Specifications		Vendor Response				
Req ID II	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #	
D <b>D1</b> 66	1	The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that includes the technical infrastructure to capture, store, and report the various forms of metadata.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	32	
DD167	1	The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that accommodates a sufficient, as defined by the Department, volume of metadata content for the proposed solution.	Data Sources, Delivery, & Display	WIII Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	32:	
DD168	1	The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that accommodates, at a minimum:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	322	
D <b>D1</b> 69	2	75 active users	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical	1. Data Sources,	322	
DD170	2	40 concurrent users	Data Sources, Delivery, & Display	Will Meet	Specifications Approach Attachment H - Technical Specifications Approach	Delivery, and Display  1 Data Sources, Delivery, and Display	322	
DD171	2	Allows for 10% growth per year spread across all user levels	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical	1. Data Sources,	322	
D <b>D1</b> 72	1	The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that has the ability to capture and synchronize metadata	Data Sources, Delivery, & Display	Will Meet	Specifications Approach Attachment H - Technical Specifications Approach	Delivery, and Display  1. Data Sources, Delivery, and Display	322	
DD173		The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that provides wild card (SQL-LIKE), keyword- and attribute-base search abilities to locate the required metadata.	Data Sources, Delivery, & d Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	323	
DD174	1	The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that provides a central interface to manage and maintain the MME	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	323	
D <b>D1</b> 75	1	The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that has an extraction capability to allow metadata to be exported and distributed in open and non-proprietary formats be authorized solution users.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	323	
D <b>D1</b> 76	1	The solution should have an extract, transform, load (ETL) mobility management entity (MME) data content component that provides a relational database repository for persistent storage of metadata content (if centralized) or for registry (if decentralized approach).	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	324	
DD177	1	The solution should provide a Database Management System an support physical database administration.	d Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	324	



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Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page 0		
DD178	1	The solution should provide a Database Management System that maintains all databases used in the proposed solution including, but not limited to:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	324		
DD179	2	Installation	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	324		
DD180	2	Configuration	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	324		
DD181	2	Updates	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	324		
DD182	2	Patch fixes	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	325		
DD183	1	The solution should provide a Database Management System that provides day-to-day database operational support.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	325		
DD184	1	The solution should provide a Database Management System that identifies and resolves problems/issues.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	325		
DD185	1	The solution should provide a Database Management System that can define and activate new environments.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	325		
DD186	1	The solution should provide a Database Management System that monitors and synchronizes such that all environments operate efficiently, and data quality and validation is ensured	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	326		
DD187	1	with additional indexing as needed.  The solution should provide a Database Management System that runs on open systems platforms.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	326		
DD188	1	The solution should provide a Database Management System that has all related cache entries on a single cache partition.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	326		
DD189	1	The solution should provide a Database Management System that supports at a minimum Extensible Markup Language (XML).	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	326		
DD190	1	The Vendor should assess the Department's reporting needs to inform development of reporting and dashboarding abilities in support of the Department.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	326		
DD191	1	The solution should have the ability to export data and query results directly from the solution into the user-specified format including, but not limited to:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	327		
DD192	2	Excel	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	327		
DD193	2	Word	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	327		
DD194	2	Hyper Text Markup Language (HTML)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	327		
DD195	2	Access	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	327		





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DD196	2	Software and Services (SAS)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	327
D <b>D1</b> 97	2	Graphical User Interface (GUI)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	327
DD198	2	Extensible Markup Language (XML)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	327
DD199	2	Application Programming Interface (API)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	327
DD200	2	Text	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	328
DD201	2	Comma-Separated Value (CSV)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	328
DD202	2	Delimited text	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	328
DD203	2	Portable Document Format (PDF)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	328
D <b>D204</b>	2	Joint Photographic Experts Group (JPEG)	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	328
D <b>D20</b> 5	2	Others as requested by the Department	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	328
D <b>D20</b> 6	1	The solution should have the ability to provide dashboards specific to Service Level Agreements (SLA) and Key Performance Indicators (KPI).	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	328
DD207	1	The solution should provide an interactive, summary-level dashboard without the need for authorized solution user programming or extensive training.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	330
D208	1	The solution's data access component should support the needs of authorized solution users to execute basic canned queries and canned reports via a dashboard.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	330
DD209	1	The solution should provide a suite of high-level and/or general- level reports designed to provide indicators and general trends within and across the member population.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	331
D <b>D2</b> 10	1	The solution should provide a mature, intuitive, easy-to-use, web- based Commercial-Off-The-Shelf (COTS) tool that addresses the data access requirements in this Request for Proposal (RFP) with an integrated comprehensive tool suite.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	331
DD211	1	The solution's data access component should have the ability to perform impact analyses due to proposed changes of the solution.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	331
D <b>D2</b> 12	1	The solution's data access component should have the ability for authorized solution users to create their own static or dynamic joins between tables.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	331

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Tab 3. Specifications & Responses

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		Specifications			Vendor Re	sponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	C≥pability Assessment	Attachment	Section	Page #
DD213	1	The solution's data access component should have the ability for query editing to support authorized solution users with query development and modification.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	331
DD214	1	The solution's data access component should have the ability to sort, filter, and find data in query results.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	331
DD215	1	The solution's data access component should have the ability to show table structure, relationships, and built-in expression-builders, or a natural-language interface in which the authorized solution user can enter a query and the system converts it into Structured Query Language (SQL) or other code.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	332
DD216	1	The solution's data access component should have the ability to support, at a minimum, complex "and/or/not" logic.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	332
DD217	1	The solution's data access component should have the ability to calculate unduplicated counts of, at a minimum, members, providers, claims, claim lines, and services.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	332
DD218	2	Members	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	332
DD219	2	Providers	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	332
DD220	2	Claim lines	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	332
DD221	2	Services	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	332
DD222	2	Others as defined by the Department	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	332
DD223	1	The solution's data access component should have the ability to support parameter-based queries.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	332
DD224	1	The solution's data access component should have the ability to support including, but not limited to:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	333
DD225	2	Inner joins	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	333
DD226	2	Outer joins	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	333
DD227	2	Unions	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	333
DD228	2	Claims	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	333
DD229	2	Intersections	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	333





		Specifications:			Vendor Response				
Reg ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #		
D <b>D23</b> 0	2	Minus operations of multiple datasets	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	333		
DD231	2	Others as defined by the Department	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	333		
DD232	1	The solution's data access component should have the ability to support correlated sub-queries.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	33:		
D <b>D2</b> 33	1	The solution's data access component should have the ability to support current American National Standards Institute's (ANSI) Structured Query Language (SQL) standards.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	333		
D <b>D234</b>	1	The solution's data access component should have the ability to apply, at a minimum, weighting and ranking in analyses.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	333		
DD235	1	The solution's data access component should have the ability for linear programming.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	334		
DD236	1	The solution's data access component should provide predictive modeling capabilities.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	334		
D <b>D23</b> 7	1	The solution's data access component should support random number assignment of members and providers.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	334		
D <b>D238</b>	1	The solution's data access component should provide multi- dimensional reporting abilities that would include slice and dice, drill down, drill up, drill across, and pivot result.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	334		
D <b>D23</b> 9	1	The solution's data access component should have the ability to provide pre-defined logical drill paths such that the authorized solution user can move up or down in levels without defining a new query.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	334		
D <b>D24</b> 0	1	The solution's data access component should have the ability to summarize grouping functions.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	334		
D <b>D24</b> 1	1	The solution's data access component should support stratified random sampling with appropriate statistics and generate random sampling with associated statistics.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	33!		
D <b>D24</b> 2	1	The solution's data access component should have the ability to build custom formulas and derivations.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	33!		
DD243	1	The solution's data access component should support what-if and reverse analyses.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	335		
D244	1	The solution's data access component should have the ability to aggregate or summarize rules based on pre-defined, static reports and data filters.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	335		
D <b>24</b> 5	1	The solution's data access component should support descriptive text and have the ability to search for elements, derivations, tags and reports.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	336		
D <b>D24</b> 6	1	The solution's data access component should have the ability to index authorized solution user-created tables in user libraries to drive queries.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	336		



		Specifications			Vendor Re	sponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
DD247	1	The solution's data access component should have the ability to generate alerts when business thresholds have been exceeded.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	336
DD248	1	The solution's data access component should have the ability to terminate runaway gueries.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	336
DD249	1	The solution's data access component should support the needs of authorized solution users to perform simple queries based on point-and-click technology.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	336
DD250	1	The solution's data access component should have the ability to version reports and queries.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	336
DD251	1	The solution's data access component should provide flexible filtering or "sub-setting" to specify the selection criteria for reports.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	337
DD252	1	The solution's data access component should provide modifiable ready-to-use subsets.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	337
DD253	1	The solution's data access component should have the ability to create, save, modify, publish, and share queries.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	337
DD254	1	The solution's data access component should provide pre- defined templates upon request.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	337
DD255	1	The solution's data access component should have the ability to provide eligibility indicators at a summary level.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	337
DD256	1	The solution's data access component should have the ability to provide financial indicators at a summary level.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	337
DD257	1	The solution's data access component should have the ability to provide utilization indicators at a summary level.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	337
DD258	1	The solution's data access component should have the ability to provide other indicators, as defined by the Department, at a summary level.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	338
DD259	1	The solution's data access component should have the ability to provide access-to-care indicators at a summary level.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	338
DD260	1	The solution's data access component should have the ability to notify the authorized solution user when user-defined criteria have been met.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	338
DD261	1	The solution's data access component should have the ability to provide an alert system to notify authorized solution users of emerging trends, detection of excessive costs, and achievement of goals.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	338
DD262	1	The solution's data access component should have the ability to apply selections as flexible objects that can be inserted, moved, or removed through drag-and-drop technology to make cross-tabular and multi-tabular reports.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	338





		Specifications		Vendor Response				
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #	
DD263	1	The solution's data access component should have the ability to allow flexible pivoting of rows to columns and columns to rows.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	33	
DD264	1	The solution's data access component should have the ability to import metadata from the database catalog and other external sources.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	33	
DD265	1	The solution's data access component should have the ability to export metadata to other external sources.	Data Sources, Delivery, & Display	Wili Meet	Attachment H - Technical	1. Data Sources,		
DD266	1	The solution's data access component should have the ability to provide ease of maintenance of metadata updates.	Data Sources, Delivery, & Display	Will Meet	Specifications Approach Attachment H - Technical Specifications Approach	Delivery, and Display  1. Data Sources,	33	
DD267	1	The solution's data access component should provide authorized solution users with the ability to create and/or import user-defined values or other driver data to inform querying and reporting.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Delivery, and Display  1. Data Sources, Delivery, and Display	33	
DD268	1	The solution's data access component should have the ability to import and save user-defined data.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical	1. Data Sources,	339	
DD269	1	The solution's data access component should have the ability to access data from external sources in native form.	Data Sources, Delivery, & Display	Will Meet	Specifications Approach Attachment H - Technical Specifications Approach	Delivery, and Display  1. Data Sources, Delivery, and Display	339	
DD270	1	The solution's data access component should have the ability to use data that has been stored in user-defined tables with a parameter that is used to join to the data warehouse to drive queries.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	339	
DD271		The solution's data access component should have the ability to import a list of user-defined values into the user library.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical	1. Data Sources,	339	
DD272	1	The solution's data access component should have the ability to import external data into tables.	Data Sources, Delivery, & Display	Will Meet	Specifications Approach Attachment H - Technical Specifications Approach	Delivery, and Display  1. Data Sources, Delivery, and Display	340	
DD273		online/contextual help function.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	340	
DD274	1	The solution's data access component should have the ability to add, delete, or develop measures from any report available without needing knowledge of Structured Query Language (SQL) or other complex query language.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	340	
D275	1	The solution's data access component should provide a menu of vlew-ready and print-ready summary-level reports, charts, maps, and graphs.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	340	
D276		menu that utilizes point-and-click functionality.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources,	341	
D277	1	The solution's data access component should have the ability to graph reports and make the reports presentation-ready without the need to export the data to third-party software.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Delivery, and Display  1. Data Sources, Delivery, and Display	341	

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		Specifications :			Vendor Re	sponse	
Req ID II	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page II
DD278	1	The solution's data access component should have the ability for online maintenance of reports including adding, deleting, editing, copying, and pasting actions.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	341
DD279	1	The solution's data access component should support data visualization techniques.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	341
DD280	1	The solution's data access component should have the ability to schedule Department-specified reports for execution and route the reports automatically through email.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	341
DD281	1	The solution should have the ability to build, name, and save multiple user-defined searches and sort parameters to allow authorized solution users to repeat the same search/sort queries.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	342
DD282	1	The solution should have the ability to capture and incorporate into queries and reports any date-sensitive occurrences that may impact analytics and reporting, including, but not limited to:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	342
DD283	2	Rate changes	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	342
DD284	2	Policy changes	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	342
DD285	2	Health plan changes	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	342
 DD286	2	Legislation	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	342
DD287	2	Others as determined by the Department	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	342
DD288	1	The solution should have the ability to capture and incorporate into queries and reports any data field in the Medicaid	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	342
DD289	1	Management Information System (MMIS).  The solution should have the ability to link external data to any structured data field in the solution to serve as a search/sort	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	342
DD290	1	The solution should maintain a library of reports organized in a manner that facilitates the use of and secure access to these	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1, Data Sources, Delivery, and Display	343
DD291	1	reports.  The Vendor solution should provide the functionality to view the results of wild card searches including, but not limited to, both single character and string wild card search for all searchable fields.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	343



		Specifications		Vendor Response				
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #	
D <b>D2</b> 92	1	The solution should have the ability to utilize all data, queries, analyses, and reporting in the solution to produce geospatial analytics and maps.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	344	
DD293	1	The solution should have the ability to perform statistical analyses on geospatial data.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	344	
DD294	1	The solution should have the ability to identify, query, analyze, and report on episodes of care or bundled services.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	344	
D <b>D29</b> 5	1	The solution should have the ability to develop and calculate fee- for-service (FFS) rates, actuarially-sound managed care rates, bundled fee-for-service and managed care rates, and others as determined by the Department.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	344	
DD296	1	The solution should have the ability to calculate travel distance including, but not limited to, member's home and relevant provider locations.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	345	
D <b>D2</b> 97	1	The solution should have the ability for authorized solution users to create and view all reports and maps on mobile devices in accordance with Department, State, and federal security and privacy policies and procedures.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	345	
D <b>D2</b> 98	1	The solution should have the ability to display to authorized solution users the number of pages to be printed before the authorized solution user proceeds with printing a report.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	345	
D <b>D29</b> 9	1	The solution should allow authorized solution users the ability to add comments to reports.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	345	
D <b>D300</b>	1	The solution should have the ability to capture and report on solution response time.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	345	
D <b>D301</b>	1	The solution should have the ability for authorized solution users to view, print, export, and analyze audit data through an integrated component of the solution.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	345	
D <b>D3</b> 02	1	The solution should provide the ability for all solution forms, documents, data files, data, and manuals to be accessible online, indexed, and content-searchable with version control.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	346	
DD303	1	The Vendor should employ a Relational Database Management System (RDBMS) or Object Oriented Database Management System (OODMS) that is easily configurable and role-based.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1. Data Sources, Delivery, and Display	346	
DD304	1	The solution should have the ability to support analytic techniques including, but not limited to:	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	346	
DD305	2	Predictive modeling	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Delivery, and Display     Delivery, and Display     Delivery, and Display	346	
D <b>D30</b> 6	2	Machine learning	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	347	



4		Specifications			Vendor Re	esponse	
Reg ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page#
DD307	2	Data mining	Data Sources, Delivery, & Display	WIII Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	347
DD308	2	Others as defined by the Department	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	1 Data Sources, Delivery, and Display	347
DD309	1	The solution should have a single point of entry for all authorized solution users.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	347
DD310	1	The Vendor should provide a data access component that works efficiently in the enterprise data solution (EDS) environment.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	348
DD311	1	The solution should have the ability to distribute reports and/or information from the enterprise data solution (EDS) portal chosen by the Department.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	348
DD312	1	The solution should provide the ability to allow authorized solution users to view, manipulate, download, and save reports locally.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	348
DD313	1	The solution should have the ability to maintain report inventories for authorized solution users.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	348
DD314	1	The solution should track Medicare deductibles and coinsurance paid by Medicaid for all crossover claims, by Member and program type, and by other data elements as defined by the Department.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	348
DD315	1	The solution should provide a tool for managing data sharing requests from both internal State agencies and external entities.	Data Sources, Delivery, & Display	Will Meet	Attachment H - Technical Specifications Approach	Data Sources,     Delivery, and Display	348
DQ001	1	The Vendor should provide Data Quality Management for all data coming into the solution.	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	350
DQ002	1	The solution should have the ability to provide data conversion as needed to feed the solution.	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	350
DQ003	1	The Vendor should develop a process to rectify source data quality issues via data checks and edit procedures as data is extracted from the solution data sources with limited impact on the data source vendors.	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	350
DQ004	1	The Vendor should ensure data integrity is checked throughout the term of the contract as an integral part of operations to ensure quality data.	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	351
DQ005	1	The Vendor should develop processes to maintain data integrity, consistency, accuracy, and timeliness of the solution data.	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	351
DQ006	1	The solution should have the ability to provide an audit trail on all changes to tables including, but not limited to:	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	351



		Specifications	Vendor Response				
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
DQ007	2	Business and system dates	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2 Data Quality	352
DQ008	2	Begin date	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	352
DQ009	2	Effective date	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	352
DQ010	2	End date	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	352
DQ <b>01</b> 1	2	User-ID and assignment/enforcement in all tables that can be modified	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	352
DQ012	1	The solution should provide a tool that supplies data profiling abilities that obtain comprehensive and accurate information on the content, quality, and structure of data in the source systems as an ongoing process.	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	352
DQ013	1	The solution should provide a tool that continually monitors the data quality within the solution and internal analytic applications.	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	352
DQ014	1	The solution should support audit and control processes that identify, report, and summarize errors in the data.	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	352
DQ015	1	The solution should provide a tool that includes error/exception handling processes that identify/isolate the errant data.	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	352
DQ016	1	The Vendor should maintain a process to identify and track all errors and discrepancies found in the solution pursuant to Service Level Agreements (SLAs).	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	353
DQ017	1	The Vendor should maintain a process to notify the Department of errors and discrepancies found in the solution pursuant to Service Level Agreements (SLAs).	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	353
DQ018	1	The Vendor should provide recommendations for proposed resolution/fixes for identified issues within a timeline approved by the Department and pursuant to Service Level Agreements (SLAs).	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	353
DQ019	1	The solution should support data integrity through system controls for software program changes and promotion to production.	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	353
DQ020	1	The solution should include an integrated automated logging and tracking component for all inquiries between authorized solution users and Vendor staff that includes, but is not limited to:		Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	354



		Specifications		Vendor Response			
Reg ID III	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
DQ021	2	The date and time of inquiry	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	354
DQ022	2	The form of inquiry (phone, email, and instant messaging)	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	354
DQ023	2	The ability to create a summary level nature of the Inquiry	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	354
<b>DQ</b> 024	2	The ability to document details of the nature of the inquiry	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	354
DQ025	2	The authorized solution user	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2 Data Quality	354
DQ026	2	The Vendor staff member	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	354
DQ027	2	The response details	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	354
DQ028	2	The date and time of the response	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	354
DQ029	2	The applicable notes on the resolution of the inquiry	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	354
DQ030	2	Other details as determined by the Department	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	355
DQ031	2	Reporting on all inquiries as requested by the Department	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2 Data Quality	355
DQ032	1	The solution should provide the ability to automate meta-tagging including, but not limited to:	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	355
DQ033	2	Reports	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	355
DQ034	2	Queries	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	355
DQ035	2	Maps based on their contents	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	355
DQ036	2	Other elements as requested by the Department	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	356
DQ037	1	The solution should have the ability to de-identify and re-identify data within the solution as needed	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	356
DQ038	1	The solution should provide the ability to review and report on data quality metrics including, but not limited to:	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	356
DQ039	2	Data completeness	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	356
DQ040	2	Data consistency	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	356
DQ041	2	Data validity	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2 Data Quality	356



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Reg ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #	
D <b>Q04</b> 2	2	Data conformity	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	356	
DQ043	2	Data accuracy	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	356	
D <b>Q04</b> 4	2	Data integrity	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	356	
DQ045	2	Others as defined by the Department	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	356	
DQ046	1	The solution should support production of X12N 270 transactions to query other payer eligibility files and ability to process responses.	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	356	
D <b>Q0</b> 47	1	The solution should comply with relevant standards including, but not limited to National Information Exchange Model (NIEM), CAQH-CORE, Health Level Seven International (HL7), X12, EDI, and HIPAA for data interchange.	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	357	
D <b>Q0</b> 48	1	The Vendor should support each phase of Council for Affordable Quality Healthcare - Committee on Operating Rules for Information Exchange (CAQH-CORE) rules.	Data Quality	Will Meet	Attachment H - Technical Specifications Approach	2.Data Quality	357	
DR <b>001</b>	1	The Vendor should deliver a Disaster Recovery and Business Continuity Plan to the Department for review and approval 30 business days prior to the start of solution operations.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2 Solution Backup, Disaster Recovery, and Failover	358	
DR <b>00</b> 2	1	The Vendor should develop, maintain, and submit to the Department within the Disaster Recovery and Business Continuity Plan all proposed offsite procedures, locations, and protocols.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	570	
DR <b>00</b> 3	1	The Vendor should perform a review of the Disaster Recovery and Business Continuity Plan annually and submit to the Department for review and approval within 30 calendar days of the review.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	571	
DR <b>00</b> 4	1	The Vendor should submit substantive change(s) to the Disaster Recovery and Business Continuity Plan to the Department for review and approval within 30 calendar days of the proposed change(s).	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	571	
DR <b>00</b> 5	1	The Vendor should provide the Department with up-to-date copies of the Disaster Recovery and Business Continuity Plan in electronic and printed versions annually and within 30 calendar days of when substantive changes are made.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	571	
DR <b>00</b> 6	1	The Vendor should ensure a copy of the most recent Disaster Recovery and Business Continuity Plan is available in hard copy and electronic form at an offsite location approved by the Department.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	571	

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		Specifications	Vendor Response				
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
DR007	1	The Vendor should ensure that each aspect of the Disaster Recovery and Business Continuity Plan is detailed as to both Vendor and Department responsibilities.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	571
DR008	1	The Vendor's Disaster Recovery and Business Continuity Plan should account for all input, processing, and output procedure functions.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	572
DR009	1	The Vendor should ensure that each aspect of the Disaster Recovery and Business Continuity Plan satisfies all requirements for federal and State certification.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	572
DR010	1	The Disaster Recovery and Business Continuity Plan should include a hierarchy that is approved by the Department of critical services, resources, and infrastructure to determine the order that services are restored.	Solution Back-up, Disaster Recovery, and Failover	Will Not Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	572
DR011	1	The Vendor should create and maintain a Disaster Recovery and Business Continuity Plan that details procedures to address events including, but not limited to:	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	572
DR012	2	Terrorist acts	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	573
DR013	2	Power disruptions or power failures	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Fallover	573
DR014	2	Solution failures	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	573
DR015	2	Significant compromise/degradation of data warehouse performance	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	573
DR016	2	Processing shutdowns	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	573





9		Specifications .		Vendor Response				
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #	
DR017	2	Labor strife or strike	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	573	
DR018	2	Natural disasters	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	574	
DR019	2	Production site becoming unsafe or Inoperable	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	574	
DR020	2	Hacking attempts or viruses	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	574	
DR021	2	Others as defined by the Department	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	574	
DR022	1	The Vendor should ensure the Disaster Recovery Platform contains the same security safeguards to protect solution data during emergency operations as during normal business operations.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	574	
DR023	1	The Vendor should ensure access to all solution components, systems, and data, 24 hours a day, 7 days a week, 365 days a year, except for Department-approved scheduled and emergency outages.	Solution Back-up, Disaster Recovery, and Failover	Will Not Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	575	
DR024	1	Pursuant to the Service Level Agreements (SLAs), the Vendor should define, maintain, and adhere to a problem identification, notification, and resolution process that includes but is not limited to the identification of the problem, its impact, root cause analysis, and resolution.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	575	
DR025	1	The Vendor should recover the solution and make it fully operational in the event of a disaster to the primary physical hosting site within 24 hours of the time of the solution failure.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	575	
DR026	1	The Vendor should include in its system design the capability to switch operations from the production environment to the failover environment in the event technical problems incapacitate the production server.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	575	



		Specifications			Vendor Re	sponse	
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page II
DR027	1	The Vendor should maintain an operational backup power supply at both primary and alternate sites capable of supporting vital functions indefinitely or until primary power is fully restored.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	575
DR028	1	The Vendor should provide backup network connectivity at both the primary and alternate sites with the capacity to support the system and its components.	Solution Back-up, Disaster Recovery, and Fallover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	575
DR029	1	The Vendor should identify and maintain a computer site at a separate location to be designated as the disaster recovery site to be approved by the Department.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	576
DR030	1	The Vendor should have a remote backup facility at least 50 miles away from the primary data center.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	576
DR031	1	The Vendor should perform an annual review of the disaster recovery backup site, procedures for all offsite storage, and validation of security procedures and submit a report of the backup site review within 30 calendar days of the review.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	576
DR032	1	The Department reserves the right to inspect the disaster recovery backup site and procedures at any time with 24-hours' notification.	Solution Back-up, Disaster Recovery, and Failover	Will Not Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	576
DR033	1	The Vendor should execute a test of the Disaster Recovery and Business Continuity Plan as part of user acceptance testing (UAT).	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	576
DR034	1	The Vendor should exercise/test the Disaster Recovery and Business Continuity Plan annually and provide the disaster recovery testing reports to the Department within 30 calendar days of the exercise/test.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	577
DR035	1	The Vendor should have the ability to restore all tables utilizing the onsite backup copies to their state prior to the erroneous load within timeframes pursuant to Service Level Agreements (SLAs). This includes, but is not limited to, source system- or application-dependent errors that result in invalid data being loaded into the data warehouse.	Solution Back-up, Disaster Recovery, and Failover	Will Not Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	577
DR036	1	The Vendor should develop and maintain an automated scheduling system for running the backup processes for all environments.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	577





		Specifications			Vendor Res	ponse	
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
DR037	1	The Vendor should backup all data files that reside in multiple environments ensuring that any data set can be restored from the backup medium within ten (10) hours of notification that a restoration is needed.	Solution Back-up, Disaster Recovery, and Failover	Will Not Meet	Attachment J - Maintenance and Operations Specifications Approach	2 Solution Backup, Disaster Recovery, and Failover	577
DR <b>038</b>	1	The Vendor should backup all databases and other data on a weekly basis and store the backups at a secure offsite location.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	577
DR039	1	The solution should have the ability to backup all data sets, files, transaction logs, documentation, program code, authorized solution user libraries of reports and queries, operating system (OS) software, databases and other items as determined by the Department.	Solution Back-up, Disaster Recovery, and Fallover	Will Not Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	577
DR <b>040</b>	1	The Vendor should ensure that backups performed by authorized solution users of reports and queries are stored on a single shared drive in the solution.	Solution Back-up, Disaster Recovery, and Fallover	Will Not Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	578
DR <b>04</b> 1	1	The Vendor should store all backup copies in a Department- approved backup storage location for a minimum of five (5) years.	Solution Back-up, Disaster Recovery, and Failover	Will Not Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	578
DR042	1	The Vendor should develop and maintain a process to verify that backup and restoration processes were run appropriately, and all scheduled backup procedures have run successfully.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	578
DR043	1	The Vendor should maintain an onsite copy of backups at the onsite facility for a period of seven (7) calendar days.	Solution Back-up, Disaster Recovery, and Failover	Will Not Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Fallover	578
DR044	1	The Vendor should store weekly backups at the remote backup facility.	Solution Back-up, Disaster Recovery, and Failover	Will Not Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	578
DR045	` 1	The Vendor should be responsible for the cost associated with the backup storage process and location	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	578
DR <b>0</b> 46	1	The Vendor should provide to the Department, within 30 calendar days of request, a Turnover and Closeout Management Plan detailing the approach to transitioning systems and operational responsibilities to a successor.	Solution Back-up, Disaster Recovery, and Failover	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	579



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DRQ47	1	The Vendor should transfer all backups to the successor vendor within the agreed-upon timeframe defined in the Department-approved Turnover and Closeout Management Plan.	Solution Back-up, Disaster Recovery, and Failover	Will Not Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	579
DR048	1	The solution should create and retain an audit trail of all interface activity in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.	Solution Back-up, Disaster Recovery, and Failover	Will Not Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	579
DR049	1	The Vendor should ensure that data is retained, archived, protected from destruction, and accessible in accordance with Department, State and federal security and privacy laws, policies, and/or procedures.	Solution Back-up, Disaster Recovery, and Fallover	Will Not Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	579
DR050	1	The Vendor should ensure that hard copy documents are retained, stored, imaged, archived, and destroyed in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.	Solution Back-up, Disaster Recovery, and Failover	Will Not Meet	Attachment J - Maintenance and Operations Specifications Approach	2.Solution Backup, Disaster Recovery, and Failover	579
FM001	1	The solution should have the ability to obtain various listings of the procedure, diagnosis, and preferred drug list (PDL) files.	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	182
FM002	1	The solution should have the ability to support analytics and reporting on claims processing errors including, but not limited to:	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	182
FM003	2	Frequency	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	183
FM004	2	Extent and type of provider	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	183
FM005	2	Others as defined by the Department	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	183
FM006	1	The solution should have the ability to report based on line and subline categories to all claim line details that correspond to the CMS-21 report.	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	183
FM007	1	The solution should have the ability to report based on line and subline categories to all claim line details that correspond to the CMS-64 report.	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	184
FM008	1	The solution should have the ability to provide data for budgeting, forecasting, and rate analysis for all benefits, benefit types, and eligibility groups.	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	184
FM009	1	The solution should have the ability to support data modeling and to import to and export from other software solutions.	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2 Financial Management	184





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Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page II
FM <b>010</b>	1	The solution should be populated with data as defined by the Department during Design, Development, and Implementation (DDI).	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	184
FM011	1	The solution should have ability to provide data for rate-setting analysis applicable to all provider types and member benefits.	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	185
FM012	1	The solution should have the ability to add attachments at the detail level of the budget using software applications defined by the Department including, but not limited to:	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	185
FM013	2	Microsoft Word	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	185
FM014	2	Microsoft Excel	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	185
FM015	2	Portable Document Format (PDF)	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	185
FM016	2	Others as defined by the Department	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	185
FM017	1	The solution should have the ability to provide ad hoc reporting that allows authorized solution user flexibility definitions, and it should have the ability to encompass the Department's reporting needs.	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	186
FM018	1	The solution should have the ability to report across all Medicaid and Social Service payments regardless of service delivery method and financing mechanism including, but not limited to, the use of a master data management system or function.	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	186
FM019	1	The solution should provide the ability to organize reports based on member enrollment and eligibility criteria.	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	186
FM020	1	The solution should have the ability to capture data necessary to perform actuarial services and analyses.	Financial Management	Will Meet	Attachment G - Business Specifications Approach	2. Financial Management	186
IN001	1	The solution should have the ability to retain a historical record of all reports created within the solution including, but not limited to:	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	358
IN002	2	Report parameters	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	358
IN003	2	Date created	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	358
IN004	2	The authorized solution user who created the report	Hardware and	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	358
IN005	2	All fields included in the report	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	358



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INO06	2	Others as defined by the Department	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	358		
IN007	1	The solution should ensure an authorized solution user experience that meets the response time goal for system latency of no more that 20 milliseconds for each workload interaction.	Hardware and Infrastructure	Will Not Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	358		
IN008	1	The solution should provide tools for maintaining and managing changes and modifications made by authorized solution users to queries and reports.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	359		
IN009	1	The solution should have the ability for hardware, operating system, database management software, and other infrastructure software to meet capacity needs including, but not limited to:	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	359		
IN010	2	Bandwidth	Hardware and	Will Meet	Attachment H - Technical	3. Hardware and	359		
IN011	2	Central processing unit processors and speed	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	359		
IN012	2	Cache size	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	359		
IN013	2	Data storage capacity	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	360		
IN014	2	Retrieval speed	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	360		
IN015	2	Others as defined by the Department	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	360		
IN016	1	The solution should have workflow processes that prevent shifting architecture inefficiencies to manual processes performed by authorized solution users.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	360		
IN017	1	The Vendor should specify to the Department the hardware, software, main operating system (OS), and configurations necessary to run the solution on client devices.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	360		
IN018	1	The solution should have business intelligence that adheres to the Department's business policies and procedures.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	361		
I <b>NO</b> 19	1	The solution should be a service-oriented architecture (SOA) with reusable and interoperable components and services.	Hardware and	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	361		
IN020	1	The Vendor should document a holistic, multi-dimensional data view that includes pictures, diagrams, and flow charts of the architecture requirements at the summary and detail levels for suppliers, the Department, and authorized solution users to visualize the solution components and interactions.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	361		



		Specifications			Vendor Response				
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IN021	1	The Vendor should ensure the architecture and application design used for the solution allow for the volume, frequency, and variety of data to be scalable, added and updated as needed by the Department.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	362		
IN <b>022</b>	1	The Vendor should provide independent application environments to support unit testing (software), system integration testing (SiT), user acceptance testing (UAT), and production deployment.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	362		
IN023	1	The Vendor should provide independent application environments (sandboxes) to support authorized solution user testing and training.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	363		
IN024	1	The Vendor should provide a solution that minimizes the cost of changes to business rules and business processes.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and infrastructure	363		
IN025	1	The Vendor should provide a solution that integrates new technology in a way that minimizes any negative impact to the solution and authorized solution users.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	364		
IN026	1	The Vendor should provide modular components and processes that lengthen the solution's life span when components are updated and/or replaced.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	364		
IN027	1	The Vendor should provide a solution that is adaptable and extensible to accommodate business and technology changes.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	364		
IN028	1	The Vendor should provide the ability for authorized solution users to run multiple sessions concurrently and have multiple views in the same environments, application, and solution components.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	364		
IN029	1	The solution should have the ability to provide a toolbar with common toolbar utilities including but not limited to:	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	364		
IN030	2	Highlight	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	364		
IN031	2	Сору	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	365		
IN032	2	Paste	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	365		
IN033	2	Zoom	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	365		
IN034	2	Others as defined by the Department	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	365		



		Specifications -			Vendor R	esponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page 1
IN035	1	The solution should have the ability for screens to be maximized, minimized, scrolled, and zoomed without the use of external, non-solution-based hot keys, and without hindering standard Windows capabilities.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	365
IN036	1	The solution should provide the ability for efficient sharing, management, and stewardship of data and data queries.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	365
IN037	1	The Vendor should work collaboratively with the Department to minimize existing barriers internally and externally, as defined by the Department.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	365
IN038	1	The solution should provide components that deliver asynchronous communication, timely alerts and notifications, and support social and collaborative environments.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	366
IN039	1	The Vendor should document the solution's architecture and clearly define service end points where system abilities can be added and/or modified without requiring changes to the end points of the solution.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	366
IN040	1	The Vendor should develop a solution where all components return the same results when the same parameters are used.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	368
IN041	1	The solution should provide the ability for concurrent use of the solution by other applications, components, and/or software.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	368
INO42	1	The Vendor should provide a solution that is compliant with the Medicaid Information Technology Architecture (MITA) Standards and Conditions.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	369
INO43	1	The Vendor should provide a solution that maintains a holistic view of emerging technologies, and aligns with Department, State, and federal health information technology (HiT) standards.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	369
IN044	1	The Vendor should maintain data governance to enable efficient, effective, correct, and relevant decision-making regarding all aspects of data related to the solution.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	369
IN045	1	The Vendor should monitor the solution and anticipate maintenance needs and scheduling.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	370
N046	1	The Vendor should develop a process to coordinate with the Department on batch control, balancing of input with data source vendors, scheduling extract, transform, load (ETL) processes, and data load cycles.	Hardware and	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	370
N047	1	The Vendor should provide the ability for authorized solution users to reset passwords through a self-service password reset option.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	371



		Specifications		Vendor Response				
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #	
N048	1	The Vendor should provide the ability for authorized solution users to self-report issues with solution components as an alternative to calling for support.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	371	
N049	1	The Vendor should define and document a process by which the Department and Vendor define new/ desired solution features and/or functionality.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	371	
IN050	1	The Vendor should provide the ability to participate in an online discussion forum to share information related to the solution including, but not limited to:	Hardware and Infrastructure	Will Meet .	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	371	
IN051	2	Post inquiries	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	371	
IN052	2	Respond to other participants	Hardware and infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	372	
IN053	2	Create topical threads on problems	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	372	
IN054	2	Moderate the posts and threads	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	372	
IN055	2	Search posts and threads by date or relevance	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure 3. Hardware and	372	
IN056	2	Others as defined by the department	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach Attachment H - Technical	Infrastructure  3. Hardware and	372	
IN057	1	The Vendor should provide a schedule for updating solution hardware and software.	Hardware and Infrastructure	Will Meet Will Meet	Specifications Approach Attachment H - Technical	Infrastructure  3. Hardware and	372	
IN058	1	The Vendor should develop, implement, and maintain standards for software installation in coordination with the Department to streamline the installation and maintenance of software.	Hardware and Infrastructure	Will Meet	Specifications Approach	infrastructure		
IN059	1	The Vendor should handle scheduled or on-demand requests to refresh the data from production with a full or referentially intact subset of data within two (2) business days.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	372	
IN060	1	The Vendor should monitor network availability, throughput, bandwidth, response time, and network congestion between authorized solution users and the solution.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	372	
IN061	1	The Vendor should supply the Department with recommendations to develop the solution to support new Industry standards, features, and/or functionality as needed.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	373	
IN062	1	The Vendor should test and troubleshoot interfaces with other contractors or vendors for information exchange.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	373	
IN063	1	The Vendor should provide a data access component that works efficiently in the enterprise data solution (EDS) environment.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	373	



		Specifications			Vendor R	esponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
IN064 —	1	The Vendor should provide a data access component that allows for integration with tools in current or future use by the Department including, but not limited to:	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and infrastructure	37
IN065	2	Microsoft Project	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	37
IN066	2	Microsoft Word	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	37
N067	2	Microsoft Excel	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3 Hardware and	37
N068	2	Portable Document Format (PDF)	Hardware and	Will Meet	Attachment H - Technical	Infrastructure 3. Hardware and	37
N069	2	Microsoft Access	Hardware and Infrastructure	Will Meet	Specifications Approach Attachment H - Technical	Infrastructure 3. Hardware and	37
N070	2	Cognos	Hardware and Infrastructure	Will Meet	Specifications Approach Attachment H - Technical	Infrastructure 3. Hardware and	37
N071	2	Tableau	Hardware and	Will Meet	Specifications Approach Attachment H - Technical	Infrastructure 3. Hardware and	37
N072	2	Others as defined by the Department	Infrastructure Hardware and	Will Meet	Specifications Approach Attachment H - Technical	Infrastructure 3. Hardware and	37
N073	1	The Vendor should describe and document in the Security, Privacy, and Confidentiality Plan the proposed approach to hosting and operating the solution including, but not limited to, production and back-up systems in a secure environment.	Infrastructure  Hardware and Infrastructure	Will Not Meet	Specifications Approach Attachment H - Technical Specifications Approach	Infrastructure 3. Hardware and Infrastructure	37.
N074	1	The Vendor should describe and document the operating platform including, but not limited to:	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	37
N075	2	Hardware	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	37.
N076	2	Databases	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	Infrastructure 3. Hardware and	37:
N077	2	System software	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	Infrastructure 3. Hardware and	37:
N078	2	Application software	Hardware and Infrastructure	Will Meet	Attachment H - Technical	Infrastructure 3. Hardware and	375
N079	2	Telecommunications	Hardware and Infrastructure	Will Meet	Specifications Approach Attachment H - Technical	Infrastructure 3 Hardware and	376
V080	2	Others as defined by the Department.	Hardware and Infrastructure	Will Meet	Specifications Approach Attachment H - Technical	Infrastructure 3. Hardware and	376
1081		The Vendor should describe and document how the platform is shared and how the Department's data is partitioned from other customers' data	Hardware and	Will Meet	Specifications Approach Attachment H - Technical Specifications Approach	Infrastructure 3. Hardware and Infrastructure	376





		Specifications -			Vendor Re	rsponse	
Req IO #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
IN082	1	The Vendor should document and describe the operational support of the solution including, not limited to:	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	376
IN <b>08</b> 3	2	Disaster recovery	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	376
IN084	2	Data/system back-up	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	377
IN085	2	Staffing and management of data center	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	377
IN <b>08</b> 6	2	Data loading	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	377
IN087	2	Data validation	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	378
IN <b>08</b> 8	2	Data cleansing for the proposed solution	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	378
IN089	2	Others as defined by the Department	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	378
IN090	1	The Vendor should describe its approach for installing the technical infrastructure, making any facility alterations (including upgrades), and establishing necessary telecommunications links in the Security, Privacy, and Confidentiality Plan.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	378
IN091	1	The Vendor should provide a site that fully supports all physical needs of the solution including, but not limited to:	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	378
IN092	2	Hardware	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	378
IN093	2	Electrical	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	378
IN094	2	Cabling	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	378
IN095	2	All other physical needs of the system	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	378
IN096	2	Others as defined by the Department	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	378
IN097	1	The Vendor should ensure all component hardware supporting the solution database structures contain an adequate number of parallel threads for authorized solution user needs.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	379
IN098	1	The Vendor should ensure bandwidth between data acquisition and the solution database servers supports refreshes of the solution database with minimal disruption.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	379



		Specifications			Vendor Re	sponse	
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
IN <b>0</b> 99	1	The Vendor should ensure solution hardware and software is compatible with internet browsers including, but not limited to	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3 Hardware and Infrastructure	379
IN100	2	Microsoft and Apple products	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	379
IN101	2	Google Chrome	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	379
IN102	2	Firefox	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	379
IN103	2	Internet Explorer (IE 7 or greater)	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	379
IN104	2	Others as defined by the Department	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	379
IN105	1	The Vendor should ensure hardware and operating systems are certified with recent major versions (1.0, 2.0, etc.) of the solution software.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	379
IN106	1	The Vendor should maintain compatibility with hardware and software for the term of the contract.	Hardware and Infrastructure	Will Not Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	379
IN1,07	1	The Vendor should provide the Department with an inventory of all solution hardware and software.	Hardware and Infrastructure	Will Not Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	380
IN108	1	The Vendor should coordinate and communicate in writing with the Department regarding the delivery, installation, repair, and maintenance of hardware updates, upgrades, and patches.	Hardware and Infrastructure	Will Not Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	380
IN109	1	The Vendor should coordinate and communicate in writing with the Department regarding the delivery, installation, repair, and maintenance of software updates, upgrades, and patches.	Hardware and Infrastructure	Will Not Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	380
IN110	1	The Vendor should provide server and storage hardware with the proven ability to support the processor, memory, input/output subsystem bandwidth, and storage for the solution.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	380
IN111	1	The Vendor should provide server and storage hardware with the capacity to handle the average and peak demands of the authorized solution user community with no performance degradation.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	380
IN112	1	The Vendor should provide component hardware supporting the solution that has a proven record that is comparable to the Department's needs.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	380





		Specifications			Vendor Response				
Req (D#	Hierarchy Level	Specification Text	Subject Matter Area	Capability : Assessment	Attachment	Section	Page #		
IN113	1	The Vendor should install, configure, enhance, and maintain all hardware and software and should provide services for the Vendor's local area network (LAN) up to the point of connection with the Department's wireless area network (WAN) and LAN network.	Hardware and Infrastructure	Will Not Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	381		
IN114	1	The Vendor should establish agreements with telecommunications network vendors to install secure data lines to its data center.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	381		
IN115	1	The Vendor should provide and maintain servers.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	381		
IN116	1	The Vendor should provide and maintain applications, web pages, and secure sockets layer (SSL) devices to support hypertext transfer protocol security (HTTPS).	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	381		
IN117	1	The Vendor should submit the proposed plans for all connections to the network to the Department for its review and approval prior to implementation.	Hardware and infrastructure	Will Not Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	381		
IN118	1	The Vendor should ensure authorized solution users are able to access the network and any necessary equipment located in the Vendor's data center from the Department's facilities.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	381		
IN119	1	The Vendor should ensure that authorized solution users have the ability to access the solution environments remotely.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	381		
IN120	1	The Vendor should have the ability to provide a firewall solution and proxies between its private network and the connection to the Department's network.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	381		
IN121	1	The Vendor should have a firewall solution and proxies in accordance with Department, State, and federal requirements.	Hardware and Infrastructure	Will <b>Not M</b> eet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	382		
IN122	1	The Vendor should allow Department authorized solution users access into the Vendor facilities.	Hardware and Infrastructure	Will Not Meet	Attachment H - Technical Specifications Approach	3. Hardware and	382		
IN123	1	The Vendor should provide network support for the solution that handles a minimum of 75 authorized solution users.		Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	382		
IN124	1	The Vendor should provide network support for the solution that handles 40 authorized solution users accessing the system concurrently.	t Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	382		
IN125	1	The Vendor should provide network support for the solution that handles ten percent (10%) growth per year in the total number of authorized solution users and concurrent authorized solution users.		Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	382		



		Specifications			Vendor Re	esponse	
Req ID II	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment.	Section	Page #
IN126	1	The Vendor should assist in the resolution of solution-related issues.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	382
IN127	1	The Vendor should manage versions, acquire associated software patches and fixes, apply fixes, and test all applied fixes.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3 Hardware and Infrastructure	383
IN128	1	The Vendor should assist with analysis of Department requests for new software and hardware for appropriateness to the overall solution and architecture.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	383
IN129	1	The Vendor should develop and maintain an inventory of software including, but not limited to:	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	383
IN130	2	Active versions	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	383
IN131	2	Licensing requirements	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	383
IN132	2	Interdependencies to assist with overall management of software upgrades	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	383
IN133	2	Others as defined by the Department	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	383
IN134	1	The Vendor should develop and implement standards for software installation including, but not limited to:	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	383
IN135	2	Data set names	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	383
IN136	2	Architecture names	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	384
IN137	2	Volume names to streamline installation and maintenance of software	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	384
IN138	2	Others as defined by the Department	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	384
IN139	1	The Vendor should manage scheduling of operating system upgrades to accommodate processing schedules and system availability needs of the Department.	Hardware and Infrastructure	Will Not Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	384
IN140	1	The Vendor should provide a plan for the physical security of the solution facilities including, but not limited to these topics:	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	384
IN141	2	Designated responsible person(s)	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	384
IN142	2	Defined perimeter and protocols for secure access	Hardware and	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	385
IN143	2	Security of the communication network and solution components	Hardware and	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	385
IN144	2	Administrative controls	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	385





		Specifications .			Vendor Response				
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability : Assessment	Attachment	Section	Page #		
IN145	1	The Vendor should provide and maintain encrypted network connections that align with State, federal, and Department requirements.	Hardware and Infrastructure	Will Not Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	385		
IN1 <b>4</b> 6	1	The solution should prioritize business intelligence data retrieval over batch extract, transform, load (ETL) processes.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	385		
IN147	1	The Vendor should describe and maintain the solution's interface design in interface control documents that are readily available to authorized solution users.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	385		
IN148	1	The solution should have a web-based browser interface that provides seamless integration to the full solution for authorized solution users.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	385		
IN149	1 ,	The solution network architecture, network hardware, and software should be compliant with:	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	386		
IN150	2	All policies and procedures issued by the West Virginia Office of Technology (WVOT)	Hardware and Infrastructure	Will Not Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	386		
I <b>N151</b>	2	National Institute of Standards and Technology (NIST) Special Publication 800-53, or the most recent NIST publication	Hardware and Infrastructure	Will Not Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	386		
IN152	2	Applicable requirements under the Office of the National Coordinator for Health Information Technology (ONC) certification criteria for electronic health record technology	Hardware and Infrastructure	Will Not Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	386		
IN153	2	Others as defined by the Department	Hardware and Infrastructure	Will Not Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	386		
IN154	1	The solution should have open application programming interfaces (APIs).	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	386		
IN155	1	The Vendor should ensure that backups of reports and queries performed by authorized solution users are stored on a single shared drive in the solution.	Hardware and infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	386		
IN156	1	The solution should leverage existing Department systems to achieve the desired to-be environment detailed within this Request for Proposal (RFP).	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	387		
IN157	1	The solution should leverage existing Department services to achieve the desired to-be environment detailed within this Request for Proposal (RFP).	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	387		
IN158	1	The solution should allow for intra- and inter-state leverage and reuse.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	387		



		Specifications			Vendor Res	ponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
IN159	1	The solution's technical architecture should enable flexibility and adaptability to respond quickly to changing business needs or regulatory requirements.	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	387
IN160	1	The solution's underlying technical hardware and software architecture should promote shared use across the enterprise, including, but not limited to:	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	387
IN161	2	N-Tier service-oriented architecture (SOA), or multi-tier architecture, with multiple architecture layers enabling complete separation of the data, application, and presentation tiers	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and Infrastructure	388
IN162	2	Standards-based interoperability technologies that include Web Service Definition Language (WSDL), Simple Object Access Protocol (SOAP), Extensible Markup Language (XMS), and Java	Hardware and Infrastructure	Will Meet		3. Hardware and Infrastructure	388
IN163	2	Others as defined by the Department	Hardware and Infrastructure	Will Meet	Attachment H - Technical Specifications Approach	3. Hardware and	388
IN164	1	The Vendor should maintain and support data management governance, data security, and data quality to ensure all data received from the Enterprise Data Solution (EDS) Interfaces and Exchanges maintains the data's integrity throughout the Extract, Transform. Load (ETL) process.	Hardware and Infrastructure	Will Meet	Attachment H - Technical	3. Hardware and Infrastructure	388
IN165	1	The Vendor should ensure the data received from the Enterprise Data Solution (EDS) Interfaces and Exchanges is consistent with the Physical Data Model and Data Dictionary.	Hardware and Infrastructure	Will Meet		3. Hardware and Infrastructure	389
IN166	1	The Vendor should be prepared to assist the Department with discussions as they pertain to data management, data governance, and/or data sharing.	Hardware and Infrastructure	Will Meet		3. Hardware and Infrastructure	390
OP001	1	The Vendor should ensure that its staff, as defined by the Department, are located onsite at the Vendor's local facility and readily available to the Department throughout each implementation stage.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1 Operations	550
OP002	1	The Vendor should supply key staff resumes to the Department for review and approval prior to key staff beginning work under the contract.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	550
OP003	1	The Vendor should supply resumes for key staff substitutions to the Department for review and approval prior to key staff substitutions performing any work under the contract	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	551





		Specifications			Vendor Res	onse	
Req 10 #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
OP004	1	The Vendor should collaborate with the Department to develop and maintain a process for authorized solution user support.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	551
OP005	1	The Vendor should provide a help desk Monday through Friday, 8:00 a.m. to 5:00 p.m. ET.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	552
OP006	1	The Vendor should maintain and ensure contract personnel staffing levels and competencies to support software applications, data integrity, analytics, user training, and contract	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	552
OP007	1	The Vendor should maintain adequate staff to perform analytic functions including, but not limited to:	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	552
OP008	2	Collaborate with the Department to develop and implement provider performance metrics for specific populations and Department programs	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	552
<b>OP00</b> 9	2	Evaluate credibility and efficacy of measures and baseline comparisons and recommend improvements where appropriate	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	553
OP010	2	Collaborate with the Department to develop analytics for payment reform activities including, but not limited to:	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	559
OP011	3	Provider incentive payment programs	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	554
OP012	3	Provider shared savings models	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	55
OP013	3	Others as defined by the Department	Operations .	Will Meet	Attachment J - Maintenance and Operations	1. Operations	55
OP014	2	Participate in stakeholder meetings to interpret results of analyses	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	55



		Specifications			Vendor Re	sponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page#
OP015	2	Provide industry best practice analytics on behalf of the Department including, but not limited to:	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	e 1. Operations	55
OP016	3	Predictive modeling	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	55
OP017	3	Member risk scores	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	55
DP018	3	Performance monitoring and benchmarking	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	55
DP019	3	Evaluating utilization variances among providers	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1 Operations	553
)P020	3	Creating provider profiles	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	557
)P021	3	Others as defined by the Department	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	557
IP022	2	Advanced reporting abilities that include both ad hoc and a standard library of reports	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	557
P023	2	Support analyses that require advanced-level statistics	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	558
P024	2	Others as defined by the Department and pursuant to Service Level Agreements (SLAs)	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	558





	The Vendor should maintain adequate staff to perform operational functions including, but not limited to:    Identify a primary and back-up point of contact for day-to-day operations			Vendor Res	ponse		
Reg ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page π
OP025	1		Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1 Operations	558
<b>OP0</b> 26	2		Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	558
OP027	2	1	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	558
OP028	2	remediation plans within the designated timeframes pursuant to	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	559
<b>OP</b> 029	2	Ensure quality control procedures are in place and utilized and that issues are resolved when identified through quality checks	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	559
OP030	2	Adhere to project and report delivery timeframes	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	560
OP031	2	Conduct business use analyses to prepare operational reports	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	560
OP032	2	Work with the Department to automate operational reports	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	560
OP033	2	Others as defined by the Department and pursuant to Service Level Agreements (SLAs)	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	563
OP034	1	The Vendor should maintain adequate staff to perform technical functions including, but not limited to:	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	56:



		5perifications			Vendor Re	sponse	
Reg (D #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
OP035	2	Maintain systems by researching and resolving problems	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	561
OP036	2	Maintain system and network integrity and security	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	561
OP037	2	Develop and maintain configuration and customization of the solution, solution tools, and rules engine	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	562
OP038	2	Establish, manage, and maintain the solution data exchanges	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	562
OP039	2	Maintain file specifications for solution data exchanges	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	562
OP040	2	Establish, manage, and maintain solution interfaces	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	563
OP041	2	Assure that new processes/new technology installations minimize negative impact on the system and authorized solution users	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1 Operations	563
OPO42	2	Schedule and execute file transfers with external solution data exchange sources	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	563
OP043		Provide regular status updates to the Department on system Issues and system updates	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	564
DP044		Maintain a system of checks and balances such that the underlying data are consistent, complete, and accurate	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	564





		Specifications			Vendor Resp	oonse	
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
QP045	2	Develop and gather requirements	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	564
OP046	2	Design, implement, and maintain solution architecture	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	564
OP047	2	Monitor solution performance and resolve issues	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	565
OP048	2	Analyze test plans, technical specifications, and test results	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	565
OP049	2	Provide system documentation	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	565
OP050	2	Others as defined by the Department and pursuant to Service Level Agreements (SLAs)	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	565
OP051	1	The Vendor should participate in project meetings as directed by the Department.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	56!
OP052	1	The Vendor should work collaboratively with the Department to explain and support electronic data solution Vendor-based operations and reporting to stakeholders, auditors, and other parties when necessary.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	56
OP053	1	The Vendor should participate in audit activities including, but not limited to:	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	56
OP054	2	Attending meetings	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	56





		Specifications			Vendor Resp	oonse	
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
QP045	2	Develop and gather requirements	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	564
OP046	2	Design, implement, and maintain solution architecture	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	564
OP047	2	Monitor solution performance and resolve issues	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	565
OP048	2	Analyze test plans, technical specifications, and test results	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	565
OP049	2	Provide system documentation	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	565
OP050	2	Others as defined by the Department and pursuant to Service Level Agreements (SLAs)	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	565
OP051	1	The Vendor should participate in project meetings as directed by the Department.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	56!
OP052	1	The Vendor should work collaboratively with the Department to explain and support electronic data solution Vendor-based operations and reporting to stakeholders, auditors, and other parties when necessary.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	56
OP053	1	The Vendor should participate in audit activities including, but not limited to:	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	56
OP054	2	Attending meetings	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	56



		Specifications			Vendor Response				
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OP055	2	Running reports	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	56		
OP056	2	Providing documentation	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	56		
OP057	2	Providing access to all system components and modules as requested by the Department	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	560		
OP058	1	The Vendor should support the State with data integration needs prior to and subsequent to the solution's implementation.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	560		
OP059	1	The Vendor should provide the Department with a Data Management Plan as defined in Appendix 2 - Deliverables and Milestones Dictionary.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	566		
OP060	1	The Vendor should agree to perform according to approved Service Level Agreements (SLA) and identified Key Performance Indicators (KPI) with associated metrics in the areas of system availability, performance, data quality, and problem management, and should consent to the Department retaining a percentage of payment if agreed-upon metrics are not achieved.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	566		
OP061	1	The Vendor should develop, maintain, and implement a Department-approved System Operations Plan as defined in Appendix 2 - Deliverables and Milestones Dictionary.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	567		
DP062	21	The Vendor should pay and arrange for an annual Statement on Standards for Attestation Engagements, System, and Organization Controls (SOC) 1, Type II audit, using the most current version of the audit, which should cover work performed by the Vendor at the Vendor's facility and data center sites.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	567		





		Specifications			Vendor Res	ponse	
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment :	Settlen	Page #
OP063	1	The Vendor should submit the annual Statement on Standards for Attestation Engagements, System and Organization Controls (SOC) 1, Type II audit report, using the most current version of the audit, to the Department for approval with an action plan to remediate findings within a timeframe agreed upon by the Vendor and the Department.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	507
OP064	1	The solution should provide an authorized solution user test environment (sandbox) to test new queries and reports prior to execution in production.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	567
OP065	1	The solution should have test environments (sandboxes) that include metadata necessary to test new queries and reports prior to execution in production.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1, Operations	568
OP066	1	The solution should have a test environment (sandbox) that can be refreshed as requested by the Department.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	568
OP067	1	The solution should utilize the same hardware, operating system, and relational database management in the test environments (sandboxes) that are used in production.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	568
OP068	1	The solution should have test environments (sandboxes) that mirror the production environment.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	568
OP069	1	The Vendor should develop, implement, and maintain a configuration management solution to migrate tested hardware and software to the production environment.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	568
	1	The solution should supply access to the user acceptance testing (UAT) environment on the enterprise data solution (EDS) portal for authorized solution users.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	569
OP070	1	The solution should provide access to the enterprise data solution (EDS) portal test environments (sandboxes) for authorized solution users.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	569



		Specifications		Vendor Response				
Reg ID#	Hierarchy Level	Specification Test	Subject Matter Area	Capability Assessment	Attachment	Section	Page #	
OP072	1	The Vendor should provide access for authorized solution users to all solution test environments as requested by the Department.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	569	
OP073	1	The solution should have a development environment to develop and unit-test all software contained within the solution.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	569	
OP074	1	The solution's user acceptance testing (UAT) environment should have the ability to support all components of the solution.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	569	
OP075	1	The solution's unit test environment should have the ability to perform full-scale system integration testing (SIT) for the solution.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	569	
OP076	1	The solution should have a unit test environment that mirrors production in hardware, software stack, and data volumes.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	570	
OP077	1	The solution should have a unit test environment that exists for all relevant components.	Operations	Will Meet	Attachment J - Maintenance and Operations Specifications Approach	1. Operations	570	
PG001	1	The solution should support a range of analysis actions including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	188	
PG002	2	Benefit modeling	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	188	
PG003	2	Clinical review	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	188	
PG004	2	Utilization management	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	189	
PG005	2	Provider-member-Managed Care Organization (MCO) profiling	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	189	
PG006	2	Program planning	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	189	
PG007	2	Forecasting	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	189	
PG008	2	Program assessment	Program Management	Will Meet	Attachment G - Business	3. Program Management	190	



		Specifications		Vendor Response				
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #	
PG009	2	Provider or contractor performance	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	190	
P <b>G01</b> 0	2	Quality assurance	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	190	
PG011	2	Fraud, waste, and abuse detection	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	191	
P <b>G01</b> 2	2	Comparison of fee-for-service (FFS) and managed care	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program  Management	192	
PG013	2	Other functions as described in the Advanced Planning Document (APD) and/or the Request for Proposal (RFP)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	192	
PG014	1	The Vendor should comply fully with all applicable Department, State, and federal requirements and regulations including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	192	
PG015	2	State Medicaid Manual	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	192	
PG016	2	Centers for Medicare & Medicald Services (CMS)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	192	
PG017	2	West Virginia State Medicaid Plan	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	193	
PG018	2	Section 1902 and 2103 of the Social Security Act	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	193	
PG019	2	Title 42, Code of Federal Regulations	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	193	
PG020	2	Applicable West Virginia Code	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	193	
PG021	2	Chapter 9, Human Services	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	193	
PG022	2	Section 504 and 508 of the Rehabilitation Act of 1973 as amended	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	193	
PG023	2	West Virginia Children's Health Insurance Program (CHIP) State	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	193	
PG024	1	The Vendor should address how data fields to be included in the data warehouse are defined and agreed upon during Design, Development and Implementation (DDI) as well as how new fields will be added.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	193	
PG025	1	The solution should mirror all fields and field naming convention (both current and future) within the Medicaid Management Information System (MMIS).	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	194	
PG026	1	The Vendor should propose, develop, produce, and maintain a searchable and indexed library embedded within all solution applications including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	19	



	Solution policy manuals Program Training materials Program Training materia			Vendor R	esponse		
Req ID #	Hierarchy Level	Specification Yest	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
PG027	2	Solution policy manuals	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	195
PG028	. 2	Training materials	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	195
PG029	2	User guides	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	195
PG030	2	Implementation memos	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	195
PG031	2	Data dictionary	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	195
PG032	2	Frequently Asked Questions (FAQs)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	195
PG033	1	reports in a searchable, electronic, legible format that is available	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	195
PG034	1	third-party reference data as it changes including, but not limited	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	195
PG035	2	Inpatient hospital Diagnosis Related Groups (DRGs)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	196
PG036	2	Current Procedural Terminology (CPT)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	196
PG037	2	Healthcare Common Procedure Coding System (HCPCS)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program	196
PG038	2	Therapeutic classes	Program Management	Will Meet	Attachment G - Business	Management 3. Program	196
PG039	1	The solution should have the ability to review utilization by Department-defined member categories to determine the extent of participation and related cost.	Program Management	Will Meet	Specifications Approach Attachment G - Business Specifications Approach	Management 3. Program Management	196
PG040	1	The solution should have the ability to review utilization by Department-defined provider categories to determine the extent of participation and related cost.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	196
PG041	1	The solution should have the ability to review utilization by Department-defined Managed Care Organization (MCO) categories to determine the extent of participation and related cost.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	196
PG042	1	The solution should have the ability to archive and retain data in accordance with Department, State, and federal regulations, laws, policies, and/or procedures.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	196





		Specifications			Vendor R	esponse	
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P <b>G04</b> 3	1	The solution should have the ability to receive data from the Medicaid Management Information System (MMIS) including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	196
PG044	2	Claims history	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	197
PG045	2	Member enrollment	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	197
P <b>G04</b> 6	2	Provider enrollment	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	197
P <b>G047</b>	2	Primary reference data such as:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	197
P <b>G048</b>	3	Diagnosis	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	197
PG049	3	Procedure	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	197
PG050	3	National Drug Code (NDC)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	197
P <b>G05</b> 1	3	Pricing	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	197
P <b>G0</b> 52	1	The solution should have the ability to refresh or replace all historical claims data, member enrollment, provider enrollment, and other primary reference data on a scheduled basis as approved by the Department.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	197
P <b>G0</b> 53	1	The solution should have the ability to refresh or replace all historical claims data, member enrollment, provider enrollment, and other primary reference data as defined by the Department.	1 -	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	197
PG054	1	The solution should provide the ability to manage offline storage and retrieval of archived data.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	198
PG055	1	The solution should have the ability to look up information such as subsets, norms, benchmarks, query creation, and all other objects.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	198
PG056	1	The solution should have the ability to receive data in different formats and from different sources including but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	198
PG057	2	Vital statistics data	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	199
PG058	2	Encounter data	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	199



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PG059	2	Managed Care Organization (MCO) encounter data	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	199
PG060	, <b>2</b>	Pharmacy data	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	199
PG061	2	Rebate data	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	200
PG062	2	Dental data	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	200
PG063	2	Behavioral health data	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	200
PG064	2	Waiver program data such as enrollment	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	200
PG065	2	Others identified by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	200
PG066	1	The solution should provide the ability to report any issues impacting integration and interoperability between the proposed solution and related data sources within one (1) business day of discovery.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	201
PG067	1	The solution should have the ability to integrate data from sources including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	202
PG068	2	Eligibility	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	202
P <b>G0</b> 69	2	Capitation	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	202
PG070	2	Claims system	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	202
PG071	2	Managed care encounter data	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	202
PG072	1	The solution should have the ability to integrate data from contractors including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	202
PG073	2	Pharmacy benefit manager (PBM)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	203
PG074	2	Behavioral health plans	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	203
PG075	2	Managed Care Organization (MCO) health plans	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	203
PG076	2	Children's Health Insurance Program (CHIP) contractors	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	203
PG077	2	Others as defined by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	203
PG078	2	All data sources as defined by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	203





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Req (0 #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
P <b>G07</b> 9	2	Providers	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	203
PG080	2	Reference files	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	203
P <b>G08</b> 1	1	The solution should have the ability to securely load, save, and report on confidential and/or proprietary data/information, and limit access to authorized solution users.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	204
PG082	1	The solution should have the ability to incorporate current standards and benchmarks as defined by the Department relevant to Medicaid and other health care programs including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	204
PG083	2	Utilization	Program Management	Will Meet	Attachment G - Business	3. Program	204
PG084	2	Cost	Program Management	Will Meet	Specifications Approach Attachment G - Business Specifications Approach	Management 3. Program Management	205
PG085	2	Quality of Care	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	205
PG086	2	Outcomes	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	206
PG087	2	Prevention	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	206
PG088	2	Access to Care	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	206
PG089	2	Eligibility	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	207
PG090	2	Administrative Performance	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	207
P <b>G09</b> 1	1	The solution should have the ability to track claims processing activities and report on current status of payments.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	208
P <b>G09</b> 2	1	The solution should have the ability to access and report on third- party avoidance and collections per West Virginia Medicald State Plan for the Department's review.		Will Meet	Attachment G - Business Specifications Approach	3. Program Management	208
P <b>G09</b> 3	1	The solution should have the ability to track claims at any status or location including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	208
P <b>G094</b>	2	Claims backlog	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	208
PG095	2	Key entry backlog	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	208
P <b>G09</b> 6	2	File status	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	208



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PG097	2	Other indicators as identified by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	209
PG098	1	The solution should have the ability to analyze and report on timely claims filing by providers.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	209
PG099	1	The solution should have the ability to report on and accurately reflect payments on dual eligibles.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	209
PG100	1	The solution should have the ability to aggregate and report on services including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	209
PG101	2	Specified time periods	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	209
PG102	2	Service categories	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	209
PG103	2	Unduplicated claims	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	209
PG104	2	Members	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	209
PG105	2	Providers	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	210
PG106	1	The solution should have the ability to identify payments by type, as defined by the Department.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	210
PG107	1	The solution should have the ability to track and report on claims by all attributes of the claim including but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	210
PG108	2	Claim and line identifier	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	210
PG109	2	Payment status	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	210
PG110	2	Member	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	210
PG111	2	Provider and entity identifiers	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	210
PG112	2	Diagnosis	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	210
PG113	2	Diagnosis code	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	210
PG114	2	Procedure	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	210
PG115	2	Procedure code	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	210
PG116	2	Treatment	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	210





PG117 PG118 PG119 PG120 PG121		Specifications		Vendor Response					
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #		
P <b>G1</b> 17	2	Dates	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	210		
P <b>G1</b> 18	2	Reviewing entity	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	211		
PG119	2	Others Identified by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	211		
PG120	1	The solution should have the ability to assist auditors in reviewing provider cost reports and establishing a basis for cost settlements.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	211		
P <b>G1</b> 21	1	The solution should have the ability to analyze and report on individual provider payments.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	211		
PG122	1	The solution should have the ability to retrieve data, on an ad hoc basis, relevant to specific operational units including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	211		
P <b>G123</b>	2	Claims resolution	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	211		
P <b>G124</b>	2	Prior authorization	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	211		
P <b>G12</b> 5	2	Medical necessity review	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	212		
P <b>G12</b> 6	2	Others identified by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	212		
PG127	1	The solution should have the ability to maintain online access to selected management reports and annual reports for the time period specified by the Department, with flexibility for the Department to alter the length of the retention period.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	212		
PG128	1	The solution should have the ability to produce the current volume of Department standard and operational reports.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	212		
P <b>G12</b> 9	1	The solution should have the ability to populate new data fields with historical data.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	212		
		The solution should have the ability to allow authorized solution users to promote rules to permanent tables upon approval through the Change Management Process		Will Meet	Attachment G - Business Specifications Approach	3. Program Management	212		
PG130	1		Program Management						



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Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
PG131	1	The solution should have the ability to create and modify automated authorized solution user-configurable business rules that link, classify, and relate rules and rule groups by patterns, mathematical sets, dependencies, and other factors.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	213
PG132	1	The solution should have the ability to allow authorized solution users to use online screens and services inside the solution to promote rules to user-specific tables.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	213
PG133	1	The solution should have the ability to configure rules to be date- specific including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	213
PG134	2	Date added	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	213
PG135	2	Date modified	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	213
PG136	2	Start and end dates	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	214
PG137	2	Effective date	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	214
PG138	ī	The solution should have the ability to allow authorized solution users to create and modify user-specific or shared business rules that link, classify, and relate rules and rule groups by patterns, mathematical sets, dependencies, and other factors.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	214
PG139	1	The solution should have the ability to allow authorized solution users to apply identifying codes to any record based on rules engine criteria.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	214
PG140	1	The solution should have the ability for authorized solution users to receive push notifications based on user-configurable parameters.	Program Management	Will Not Meet	Attachment G - Business Specifications Approach	3. Program Management	214
PG141	1	The solution should have the ability for authorized solution users to review and validate rules without the need to learn a specialized coding language.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	214
PG142	1	The solution should have the ability to process multi-level rule review and approval that validates logic errors, conflicts, redundancy, and incompleteness across business rules as they are being developed, tested, and implemented.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	215



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Reg ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
PG143	1	The solution should have the ability for authorized solution users to test rules against replicated data prior to implementation, including full user acceptance testing (UAT) of the rules.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	215
PG144	1	The solution should have the ability to track and report rule usage, exception usage, and when rules fail to work as designed, and provide recommendations to resolve rule failure.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	215
PG145	1	The solution should have the ability to capture care management data including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	215
PG146	2	Treatment plan	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program  Management	21!
PG147	2	Outcomes	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program  Management	21!
PG148	2	Prior authorization information	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
PG149	2	Others as defined by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
PG150	1	The solution should have the ability to capture compliance incident data including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program  Management	21
PG151	2	Anomalies and adverse actions, such as:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
PG152	3	Termination	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
PG153	3	Suspension	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
PG154	3	Nonrenewals	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
PG155	3	Denial of contracts	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	
PG156	3	Others as defined by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	21
PG157	1	The solution should have the ability to capture claims data including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program  Management	2:
PG158	2	Payment	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	2
PG159	2	In-house claim number	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program  Management	2
PG160	2	Member number	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program  Management	
PG161	2	Patient account number	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	2



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PG162	2	Encounters	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	2:
PG163	2	Adjudication	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	2:
PG164		Historical payment information	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
PG165	2	Others as defined by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
PG166	1	The solution should have the ability to capture encounter data including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
PG167	2	Adjudication and encounter payment history information	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
PG168		Others as defined by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
PG169	1	The solution should have the ability to capture reference data including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
PG170	2	Filing deadlines	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
G171		Code sets	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
G172	2	Drug status (preferred, non-preferred, non-managed)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	21
G173	2	Procedure code	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
G174	2	Diagnosis-related group (DRG)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
G175	2	Ambulatory payment classification	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21:
G176	2	National Correct Coding Initiative (NCCI) information	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	21:
G177		Others as defined by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	218
G178	1	The solution should have the ability to capture plan data, as defined by the Department.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	218
G179	1	The solution should have the ability to capture carrier data including, but not limited to:	Program Management	Will Meet	Attachment G - Business	3. Program	218
G180	2	Third-party policy type	Program Management	Will Meet	Specifications Approach Attachment G - Business Specifications Approach	Management 3. Program	218
S181	2	Coverage	Program Management	Will Meet	Attachment G - Business Specifications Approach	Management 3. Program	218





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Req ID II	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
PG1.82	2	Policy number	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	218
PG183	2	Effective date	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program  Management	218
PG184	2	Benefits	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	219
PG185	2	Others defined by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	219
PG186	1	The solution should have the ability to capture data source contracting information including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	219
PG187	2	Provider network	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program  Management	219
PG188	2	Contract	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	21
PG189	2	Grievance and appeals information	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
PG190	2	Others defined by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	21
PG191	1	The solution should have the ability to capture member data including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
PG192	2	Demographics	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	21
PG193	2	Eligibility	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	22
PG194	2	Enrollment	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	22
PG195	2	Grievance and appeals information	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program  Management	22
PG196	2	Others defined by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program  Management	22
PG197	1	The solution should have the ability to provide authorized solution users with analytical tools including statistical, comparative, and financial trend analyses, as well as case-mix	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	22
PG198	1	adjustments.  The solution should have the ability to compare current expenditures by service type and/or member/eligibility catego with previous period expenditures to establish a frame of reference for analyzing trends.	ry Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	2
PG199	1	The solution should have the ability to compare actual expenditures against budget to determine control of current a projected financial positions.	nd Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	2



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PG200	1	The solution should have the ability to analyze expenditures to identify areas of greatest cost.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	22		
PG201	1	The solution should have the ability to report on utilization and cost of services against benefit limitations.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	22		
PG202	1	The solution should have the ability to provide member enrollment and participation analyses and overall summary, showing utilization rates, payments, and numbers of members by eligibility category.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	22		
PG203	1	The solution should have the ability to provide expenditure data by service codes including, but not limited to, current versions of:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	22		
PG204	2	Healthcare Common Procedure Coding System (HCPCS)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	22		
PG205	2	International Classification of Diseases (ICD)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	22		
PG206	2	Clinical modifiers	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	22		
PG207	2	National Drug Code (NDC)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	22		
PG208	2	Revenue codes	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	22		
<b>2G</b> 209	1	The solution should have the ability to support determining reimbursement methodologies by providing expenditure data by service codes including, but not limited to, current versions of:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	22		
G210	2	Healthcare Common Procedure Coding System (HCPCS)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	22		
G211	2	International Classification of Diseases (ICD)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management			
G212	2	Clinical modifiers	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	. 22		
G213		National Drug Code (NDC)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	22.		
G214		Revenue codes  The solution should have the ability to analyze provider	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	22		
G215	_	participation data by criteria including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	22:		
3216			Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	223		
3217 	2	Services	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	224		





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PG218	2	Types of services	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	224
PG219	2	Member eligibility categories	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	224
PG220	2	Others defined by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	224
PG221	1	The solution should have the ability to summarize expenditures based on type of federal expenditure and the member's eligibilit and program.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	224
PG222	1	The solution should have the ability for authorized solution users to perform prospective and retrospective policy modeling (what if analyses) on claims edit checking and adjudication rules, claims parameters and payment rules, provider payment rules or amounts, or claims sequencing.		Will Meet	Attachment G - Business Specifications Approach	3. Program Management	224
PG223	1	The solution should have the ability for authorized solution users to perform prospective and retrospective policy modeling (what if analyses) on changes in provider profiles.		Will Meet	Attachment G - Business Specifications Approach	3. Program Management	225
PG224	1	The solution should have the ability for authorized solution users to perform prospective and retrospective policy modeling (what if analyses) on changes in member profiles.		Will Meet	Attachment G - Business Specifications Approach	3. Program Management	225
PG225	1	The solution should have the ability for authorized solution user to perform prospective and retrospective policy modeling (what if analyses) on changes in benefit plans.		Will Meet	Attachment G - Business Specifications Approach	3. Program Management	225
PG226	1	The solution should have the ability for authorized solution user to perform prospective and retrospective policy modeling (what if analyses) on patterns in relationships between disparate data.	- Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	225
PG227	1	The solution should have the ability for authorized solution user to perform policy modeling (what-if analyses) on other criteria a defined by the Department.		Will Meet	Attachment G - Business Specifications Approach	3. Program Management	226
PG228	1	The solution should have the ability for authorized solution user to perform retrospective reviews on claims that appear to have been inappropriately pald, such as:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	226
PG229	2	Excessive units	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	226
PG230	2	Duplicate services	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	226
PG231	2	Coding errors, or other errors	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	226



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PG232	1	The solution should have the ability for authorized solution users to perform retrospective reviews to determine whether services and billings were a medically-necessary exception to usual practice.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	226
PG233	1	The solution should have the ability to compare encounter data and claims with capitation versus fee-for-service (FFS) payment data to determine optimal utilization and payment scenarios.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	227
PG234	1	The solution should have the ability to report health care quality measures in accordance with the Centers for Medicare & Medicaid Services (CMS) Technical Specifications including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	227
PG235	2	Adult Core Set	Program Management	Will Meet	Attachment G - Business	3. Program	227
PG236	2	Child Core Set	Program Management	Will Meet	Specifications Approach Attachment G - Business Specifications Approach	Management 3. Program Management	228
PG237	2	Health Home Core Set	Program Management	Will Meet	Attachment G - Business	3. Program	228
PG238	2	Substance Use Disorder (SUD) Waiver Measures	Program Management	Will Meet	Specifications Approach Attachment G - Business	Management 3. Program	228
PG239	2	Others identified by the CMS and/or the Department	Program Management	Will Meet	Specifications Approach Attachment G - Business Specifications Approach	Management 3. Program Management	228
PG240	1	The solution should have the ability to provide on an annual basis pre-built queries for the Centers for Medicare & Medicaid Services (CMS) Adult Core Set, Child Core Set, Health Home Core Set, Substance Use Disorder (SUD) Waiver Measures, and others identified by CMS and/or the Department, and the Vendor should review the queries with Department staff once they are complete within a timeline agreed upon with the Department.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	228
PG241	1	The solution should maintain all historical queries for the Centers for Medicare & Medicaid Services (CMS) Adult Core Set, Child Core Set, Health Home Core Set, Substance Use Disorder (SUD) Waiver Measures, and others identified by the Department and/or CMS for a minimum of ten (10) years.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	228
PG242	1	The solution should have the ability to report state-defined healthcare quality measures in accordance with specification criteria from various measure stewards such as:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	228
PG243	2	Phones Coult All (DOA)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	229



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P <b>G24</b> 4	2	National Quality Forum (NQF)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	229
P <b>G24</b> 5	2	National Committee for Quality Assurance (NCQA)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	229
P <b>G24</b> 6	2	Healthcare Effectiveness Data and Information Set (HEDIS) Measures	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	229
PG247	2	The Joint Commission (TJC) National Quality Measures	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	229
PG248	2	Centers for Medicare & Medicaid Services (CMS) Measures	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	229
PG249	2	U.S. Office of Population Affairs (OPA)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	229
PG250	2	Agency for Healthcare Research and Quality (AHRQ)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	229
PG251	2	Centers for Disease Control (CDC)	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	229
PG252	2	Others as identified by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	230
PG253	1	The solution should provide the ability to produce multidimensional, flexible, ad hoc reports across business functions which meet reporting needs including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	230
PG254	2	Financial reporting	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	230
PG255	2	Budget forecasting	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	230
PG256	2	Fiscal planning and control	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	230
PG257	2	Claims payment accuracy	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	231
PG258	2	Expenditures	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	231
PG259	2	Timely reimbursement analysis	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	231
PG260	2	Cost/benefit analysis	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	231
PG261	2	Eligibility and benefit design	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	231
PG262	2	Geographical analysis	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	231
PG263	2	Program planning	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	231



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PG264	2	Policy Analysis	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	231
PG265	2	Federal waiver program evaluation	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	231
PG266	2	Adequacy of and access to care	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	231
<b>PG</b> 267	2	Quality of care	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	232
PG268	2	Outcomes assessment	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	232
PG269	2	Disease management.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	232
PG270	2	Managed care plan planning and analyses	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	232
PG271	2	Others as defined by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	232
PG272	1	The solution should have the ability to calculate Department- specified calculations in temporary arrays allowing for multi-step array-based queries.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	232
PG273	1	The solution's data access component should allow the authorized solution user to have the ability to type or select from any menu options available in the solution that include measures, dimensions, subsets, and time periods.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	233
PG274	1	The solution's data access component should provide the authorized solution user with search capability for all unique values for macros whose size exceeds system limitations.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	233
PG275	1	The solution should have the ability to capture data collected by each contracted Managed Care Organization (MCO) including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	233
PG276	2	Social determinants of health	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	233
PG277	2	Others as defined by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	234
PG278	1	The solution should have the ability to produce a hospice report comparing hospice days to inpatient days for each enrolled hospice member and for all hospice providers.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	234
PG279	1	The solution should track the impact of the Medicare drug program.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	234
PG280	1	The solution should provide information required for the review and development of medical assistance policy and regulations.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	234





		Specifications		Vendor Response				
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section .	Page #	
PG281	1	The solution should support the projection of the cost of program services for future periods.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	234	
P <b>G28</b> 2	1	The solution should meet Transformed Medicaid Statistical Information System (T-MSIS) reporting timelines, providing T-MSIS tapes for submission in accordance with the tape delivery schedules.	Program Management	Will Not Meet	Attachment G - Business Specifications Approach	3. Program Management	235	
PG283	1	The solution should comply with the information reporting requirements of section 6041 of the Internal Revenue Code (26 U.S.C. 6041). Section 6041 requires the filing of annual information returns showing amounts paid to providers, who are identified by name, address, and social security number or employer identification number.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	235	
PG284	1	The solution should provide the ability to create a quarterly report on expenditures under the Money Follows the Person program based on the Department's rules.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	236	
PG285	1	The solution development efforts should be tied to and supportive of agency goals and objectives including, but not limited to:	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	236	
PG286	2	Managing long term care costs	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	236	
PG287	2	Acute care	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	237	
PG288	2	Others as defined by the Department	Program Management	Will Meet	Attachment G - Business Specifications Approach	3 Program Management	237	
PG289	1	The solution should have the ability to meet Department-defined time frames and prioritization for processing authorized solution user requests.	Program Management	Will Meet	Attachment G - Business Specifications Approach	3. Program Management	237	
PI001	1	The solution should have the ability to search, sort, filter, and group by any field to support investigative case management.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	239	
PiOO2	1	The solution should have the ability to associate providers with their members and members with their providers to view those relationships and to access all associated data including, but not limited to:	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	240	
PI <b>00</b> 3	2	Member records	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program	240	
PI <b>00</b> 4	2	Provider records	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	241	
P1005	2	Prior authorizations	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program Integrity	242	
P1006	2	Member case management data	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	242	



		Specifications			Vendor R	esponse	
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
PI007	2	Claim/encounter records when accessing any one of them in the solution	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	242
PI008	1	The solution should have the ability to associate providers to providers and providers to members to view those relationships and to access all associated data including, but not limited to:	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	243
PI009	2	Member records	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	243
PI010	2	Provider records	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	244
PI011	2	Prior authorizations	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program integrity	244
PI012	2	Member case management data	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	244
PI013	2	Claim/encounter records when accessing any one of them in the solution	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	244
PI014	1	The solution should include an Investigative Case Management component with the ability to capture, store, track, and report on all actions, determinations, and resolutions through to final resolution including, but not limited to:	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	245
PI015	2	Suspensions	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	245
PI016	2	Terminations	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	246
PI017	2	Criminal/civil convictions	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	246
P1018	2	Recovered amounts from referrals of potential fraud, waste, and abuse	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	246
PI019	2	Recovered amounts from improper payment	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program Integrity	246
PI020	2	Recovered amounts from various third-party recoveries including, but not limited to:	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	246
PI021	3	Tort and casualty	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	246
PI022	3	Restitution	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	246
PI023	3	Trust and trust recoveries	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program Integrity	246
PIO24	1	The solution should include an Investigative Case Management component that manages recoveries including, but not limited to:	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	247





		Specifications			Vendor Re	esponse	
Req (D #	Hierarchy Level	Specification Text:	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
P1025	2	Tracking payments received	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program Integrity	247
P <b>I026</b>	2	Payment plans	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	247
P <b>I027</b>	2	Offsets	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	247
P <b>I028</b>	2	Claim/encounter adjustments	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	247
P <b>I029</b>	2	Settlements	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program	247
P <b>I030</b>	2	Restitutions	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	247
P <b>I03</b> 1	2	Multiple payments and checks	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program	247
P <b>I032</b>	2	Amounts remaining due	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	248
P1033	2	Due dates	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program Integrity	248
P <b>I034</b>	2	Court case numbers and jurisdictions	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program	248
P <b>I035</b>	2	Defendant names	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program Integrity	248
P <b>1036</b>	2	Recovery supplier payments	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	248
P <b>i037</b>	2	Federal share calculations	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	248
P <b>I038</b>	2	Bankruptcies	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	248
PI <b>03</b> 9	2	Business status including out of business	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	248
PI <b>040</b>	1	The solution should include an Investigative Case Management component that manages recoveries with the ability to link all claims associated with an investigation.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	248
PI <b>041</b>	1	The solution should include an Investigative Case Management component that manages recoveries including the stage of review with respect to:	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program Integrity	249
PI <b>042</b>	2	Investigations	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	250
PI <b>043</b>	2	Appeals	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	250
P <b>i044</b>	2	Final dispositions	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	250

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		Specifications			Vendor R	esponse	
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
PI045	2	Referrals	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	250
P1046	2	Active status	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	250
PI047	2	Managed Care Organizations (MCOs)	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	250
P1048	2	Responsible parties	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	251
PI049	2	Linked investigation claims	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	251
P1050	2	Others as defined by the Department	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	251
PI051	1	The solution should include an Investigative Case Management component that has an audit trail on each record including, but not limited to:	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	251
Pi052	2	Notes	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program integrity	251
P1053	2	Capturing changes by authorized solution user identification	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	251
P1054	2	Date and time of change	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	252
P1055	1	The solution should have an Investigative Case Management component that supports multiple ongoing Department-specific reviews within a single case	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	252
PI056	1	The solution should have an Investigative Case Management component that supports reporting on all case information including, but not limited to:	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	253
P1057	2	Overall case status	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	254
PI058	2	Department-specific audit status	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	254
PI <b>0</b> 59	1	The solution should include an Investigative Case Management component that includes automatic and scheduled notification of case status changes, and other criteria as defined by the Department.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	254
PI060	1	The solution should include an Investigative Case Management component that allows claims and encounter data to be flagged to indicate the current audit process stage including, but not limited to:	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	255
PI061	2	Open	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program Integrity	255





		Specifications:			Vendor R	esponse	
Req ID#	Hierarchy Lovel	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page II
P <b>I06</b> 2	2	Under review	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	255
P1063	2	Finalized	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	255
PI <b>064</b>	2	Needs follow-up	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	255
PI065	2	Other statuses identified by the Department	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	255
P <b>I066</b>	1	The solution should have the ability to produce comprehensive statistical profiles of providers by peer groups for all categories o service authorized under the Medicaid program.	f Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	255
P <b>I067</b>	1	The solution should have the ability to perform analyses and produce reports responsive to requests from the Department by means of computerized exception processing techniques.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	256
PI068	1	The solution should have the ability to suppress processing on a member within specified categories on a run-to-run basis.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	256
PI <b>069</b>	1	The solution should provide access to all data elements outlined in the State Medicaid Manual (SMM) Part 11, section 11335, and all additional data required for appropriate analysis of the program.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	256
PI <b>070</b>	1	The solution should have the ability to export claims-based class groupings such that data can be used within a spreadsheet or database software.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	256
PI <b>071</b>	1	The solution should include a process to weight and rank exception report items to facilitate identification of the highest deviators.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	257
PI <b>07</b> 2	1	The solution should have the ability to capture provider and member use of covered services and items including, but not limited to, prescribed drugs.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	257
P1073	1	The solution should have the ability to classify members into pee groups to develop peer group statistical profiles using criteria including, but not limited to:	r Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	257
P <b>I074</b>	2	Age	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	257
P <b>I07</b> 5	2	Gender	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	257
PI <b>07</b> 6	2	Race	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	258



		Specifications			Vendor Re	esponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
PI077	2	Geographic region	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	258
PI078	2	Eligibility Category	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	258
PI079	2	Special programs code	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	258
PI080	2	Claims data elements	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	258
PI081	2	Other criteria defined by the Department	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	258
PI082	1	The solution should have the ability to classify providers into peer groups to develop peer group statistical profiles for comparative analyses using criteria including, but not limited to:		Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	258
PI083	2	Category of service	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	258
PI084	2	Provider type	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	259
PI085	2	Provider specialty	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program Integrity	259
PI086	2	Type of practice	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	259
Pi087	2	Enrollment status	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program	259
PI088	2	Facility type	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program	259
PI089	2	Geographic region	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program	259
PI090	2	Place of service	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	259
PI091	2	Billing versus rendering provider	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program Integrity	259
PI092	2	Number of beds	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	259
PI093	2	Claim data elements	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	259
PI094	2	Provider ownership	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	260
PI095	2	Referring provider	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	260
Pi096	2	Ordering provider	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	260





		Specifications			Vendor Re	sponse	
eq ID #	Hierarchy Level	Specification Text	Subject Motter Area	Capability Assessment	Attachment	Section	Page #
1097	2	Prescribing provider	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	260
1098	2	Individual providers within group practices	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	26:
1099	2	Other criteria defined by the Department	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	26
1100	1	The solution should have the ability to develop provider and member profiles sufficient to provide specific information as to the use of covered types of services and items including, but not	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	26
1101	1	limited to prescribed drugs.  The solution should have the ability to classify treatment to develop statistical profiles by diagnosis codes and/or diagnosis code ranges.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	26
1102	1	The solution should have the ability to classify treatment to develop statistical profiles by procedure codes and/or procedure	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	26
P(103	1	The solution should have the ability to track readmissions for members readmitted to the same or different inpatient	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	20
P 104	1	facility(ies).  The solution should have the ability to analyze rendering, ordering, referring, prescribing, and billing provider practices to report atypical utilization and/or billing patterns.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	2
P1105	1	The solution should have the ability to provide statistically valid random samples as defined by the Department and extract data for provider audits, member utilization analysis, and recoupment	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	2
PI106	1	of funds.  The solution should have the ability to support analytics of service and billing practices to detect utilization and billing problems including, but not limited to:	Program integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program integrity	2
PI107	2	Incidental procedures	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program Integrity	2
PI108	2	Mutually exclusive procedures and/or procedure codes	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	
PI109	2	Mutually required procedures and/or procedure codes	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program Integrity	
PI110	2	Unbundling of procedure codes	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program	
PI111	2	Bill splitting	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program	
PI112	2	Other fields identified by the Department	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	



		Specifications			Vendor Response				
Req (D#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #		
Pi113	1	The solution should have the ability to create random sample reports that include appropriate universe and sample totals to support analyses at varying levels of confidence.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program Integrity	20		
Pl114	1	The solution should maintain a date-driven parameter control fil- with online, real-time edit and update capability that allows the Department to specify criteria including, but not limited to:	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	20		
PI115	2	Data extraction criteria	Program Integrity	Will Meet	Attachment G - Business	4. Program	26		
PI116	2	Report content	Program Integrity	Will Meet	Specifications Approach Attachment G - Business Specifications Approach	Integrity 4. Program	26		
PI117	2	Date parameters	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	Integrity 4 Program Integrity	26		
PI118	2	Exception parameters	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	26		
1119	2	Others as defined by the Department	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	26		
1120	1	The solution should have the ability to generate frequency distributions and rankings for authorized solution user-selected report and statistical items.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	26		
1121	1	The solution should include all claims data elements.	Program Integrity	Will Meet	Attachment G - Business	4. Program	268		
1122	1	The solution should have the ability to flag a claim's most recent iteration.	Program Integrity	Will Meet	Specifications Approach Attachment G - Business Specifications Approach	Integrity 4. Program	268		
1123		The solution should have the ability to review all iterations of claims in order to ensure claims are processed within Department policy guidelines, contractual requirements, and all applicable State and federal laws and requirements.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	Integrity 4 Program Integrity	268		
124	1	The solution should have the ability to review paid claims in order to:	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program	268		
125	2	Ensure claims are paid within Department policy guidelines, contractual requirements, and all applicable State and federal laws and requirements	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	Integrity 4. Program Integrity	268		
126			Program Integrity	Will Meet	Attachment G - Business	4. Program	269		
127	2	Identify excessive quantities and/or duplicate billing for the same procedure and/or procedure code ranges	Program Integrity	Will Meet	Attachment G - Business	Integrity 4 Program	269		
28	2	Identify excessive use of Healthcare Common Procedure Coding	Program Integrity	Will Meet	Specifications Approach Attachment G - Business Specifications Approach	Integrity 4. Program Integrity	269		



		Specifications			Vendor Re	sponse	
leq 10 #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
1129	2	Identify claims paid above the quantity of claims, monetary, or other Department-specified limits.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program Integrity	270
1130	2	Other criteria defined by the Department	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	270
PI131	1	The Vendor should assist the Department staff in responding to any audit requests from federal and State agencies and external entities.		Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	270
PI132	1	The solution should have the ability to use historical data to support types of investigations including, but not limited to:	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	270
PI133	2	Provider utilization review	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program Integrity	270
PI134	2	Provider compliance review	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	270
P1135	2	Member compliance review	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	270
PI136	2	Member utilization review	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	27:
PI137	2	Drug utilization review	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	27:
PI138	2	Other as defined by the Department	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	27:
P1139	1	The solution should have the ability to interface with all Department-specified claims processing systems.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	27
PI140	1	The solution should have the ability to conduct surveillance and utilization review (SUR) across all Medicaid services and Social Services payments regardless of the service delivery method of financing mechanism.	Program integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	
PI141	1	The solution should have the ability to link all services to a sing member regardless of the number of historical changes in the member identification (ID) number.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	27
PI142	1	The solution should have the ability to maintain appropriate controls and audit trails to ensure that the most current surveillance and utilization review (SUR) data are used in all processes relying on the SUR data repository.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	27
PI143	1	The solution should have surveillance and utilization review (S functions to produce management summary reports and to eccentrol files for inactive service codes including, but not limite to:	it    Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	27
PI144	2	Procedure codes	Program integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	27
P1145	2	Revenue codes	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	2



		Specifications			Vendor R	'esponse	
Reg ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
PI146	1	The solution should have the ability to track federally-assisted program participants separately from other categories of assistance.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	27
PI147	1	The solution should have the ability to identify members who exceed program norms, ranked by severity.	Program Integrity	Will Meet	Attachment G - Business	4. Program	27
PI148	1	The solution should have the ability to identify services received by members who are enrolled in selected programs.	Program Integrity	Will Meet	Specifications Approach Attachment G - Business Specifications Approach	Integrity 4. Program	27
PI149	1	The solution should have the ability to identify services received by members who have specified diagnoses.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	Integrity 4. Program	27
PI150	1	The solution should have the ability to profile all services provided to a member during a single episode of care.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	Integrity 4. Program	27
PI151	1	The solution should have the ability to generate reports of individual members by peer group.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	Integrity 4 Program Integrity	27
Pl152	1	The solution should have the ability to select claims and encounter data dating back to whatever time period is appropriate for the specific research.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	27
PI153	1	The solution should have the ability to produce claim and encounter detail and special reports by provider type and member classification including, but not limited to:	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	27
PI154	2	Category of service	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program	27
1155	2	Group practice	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	Integrity 4. Program	27
1156		Case	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	Integrity 4. Program Integrity	27-
1157	1	The solution should have the ability to provide and store all utilization reports in the medium designated by the Department.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	27
1158	1	The solution should have the ability to provide standard Department and Centers for Medicare & Medicaid Services (CMS) program integrity reports in accordance with Department reporting standards.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	274
159	1	The solution should have the ability to provide the flexibility to vary time periods for reporting purposes and produce reports on a daily, monthly, quarterly, or other frequency as specified by the Department.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	275
160	1	The solution should have the ability to display all relevant data by National Provider Identifier (NPI) or by a subset of the provider's practice.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	275
<b>1</b> 61	1	The solution should have the ability to develop and implement technical and authorized solution user training programs.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	275





		Specifications		Vendor Response				
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #	
PI162	1	The solution should have the ability to automatically identify exceptions to norms of utilization or quality of care standards established by the Department for any type of member covered by the Department plan.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	275	
PI163	1	The solution should have the ability to automatically identify deficiencies and generate reports on levels of care and quality of care by provider type.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4 Program Integrity	275	
PI164	1	The solution should have the ability to support pattern recognition and provide an automated fraud and abuse profiling system, that includes pre-built algorithms for the ongoing monitoring of provider and member claims to detect patterns of potential fraud, waste, and abuse, including excessive billing.	Program integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	275	
Pl165	1	The solution should have the ability to automatically report on details of the practice of providers identified as exceptions or outliers.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	276	
Pl166	1	The solution should have the ability to identify misutilization of services by individual members and promote corrective actions.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	276	
PI167	1	The solution should have the ability to automatically identify exceptions to norms of practice established by the Department for any type of provider covered by the Department plan.	Program Integrity	Will <b>M</b> eet	Attachment G - Business Specifications Approach	4. Program Integrity	277	
PI168	1	The solution should have the ability to apply clinically-approved guidelines against episodes of care to identify instances of treatment inconsistent with guidelines.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	277	
PI169	1	The solution should have the ability to generate early warning reports of high-cost services and service misutilization based on current payment data to quickly identify high-volume practices.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	277	
PI170	1	The solution should have the ability to support provider performance reviews to determine the adequacy and extent of participation and service delivery.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	277	
PI171	1	The solution should have the ability to review provider participation and analyze provider service capacity in terms of member access to health care.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	277	
P1172	1	The solution should have the ability to support report balancing and verification procedures.	Program Integrity	Will Meet	Attachment G - Business Specifications Approach	4. Program Integrity	277	
PM001	1	The solution should align with the Department's vision for the to- be Enterprise Data Solution (EDS) environment.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	416	



		Specifications			Vendor F	lesponse	
Reg ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
PM002	1	The solution's initial data load should consist of all data contained within the existing data warehouse decision support system (DW/DSS) at the time of the implementation of the Enterprise Data Solution (EDS).	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	416
PM003	1	The solution's initial data load should be inclusive of all data sources identified by the Department.	Project Management	Will Meet	Attachment   - Implementation Specifications Approach	Project     Management     Methodology	416
PM004	1	The solution should support daily, weekly, monthly, and as needed data loads from all data sources identified by the Department.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	417
PM005	1	The Vendor should assist the Department in obtaining, integrating, and maintaining data that includes but is not limited to:	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	417
PM006	2	Medicaid data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	418
PM007	2	Medicare data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1 Project Management Methodology	418
PM008	2	Commercial payer data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	419
PM009	2	West Virginia Children's Health Insurance Program (WVCHIP) data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	419
PM010	2	Managed Care Organization (MCO) data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	419
PM011	2	Higher education facilities and universities data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	419
PM012	2	Administrative Services Organization (ASO) data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	420
M013	2	Health Statistics Center (HSC) data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1 Project Management Methodology	420
M014	2	Public Employees Insurance Agency (PEIA) data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	420



	115.0	Specifications	A 100 Sec.		Vendor Re	sponse	
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #1
PM015	2	West Virginia Health Information Network (WVHIN) data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	420
PM016	2	Hospital Data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	421
PM017	2	Others as defined by the Department	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	421
PIM018	1	The solution should support the integration, management, and use of data from the following data sources including, but not limited to:	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	421
PM019	2	Medicaid data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	423
PM020	2	Medicare data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	424
PM021	2	Commercial payer data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project  Management  Methodology	424
PM022	2	West Virginia Children's Health Insurance Program (WVCHIP) data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project  Management  Methodology	425
PM023	2	Managed Care Organization (MCO) data	Project Management	Will Meet	Attachment 1 - Implementation Specifications Approach	Project     Management     Methodology	425
PM024	2	Higher education facilities and universities data	Project Management	Will Meet	Attachment 1 - Implementation Specifications Approach	1. Project Management Methodology	425
PM025	2	Administrative Services Organization (ASO) data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project  Management  Methodology	425
PM026	2	Health Statistics Center (HSC) data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	426
PIM027	2	Public Employees Insurance Agency (PEIA) data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project  Management  Methodology	426
PIM028	2	West Virginia Health Information Network (WVHIN) data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	426



		Specifications			Vendor I	Response	
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
PM029	2	Hospital data	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	42
PM030	2	Others as defined by the Department	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	420
PM031	1	The solution should have the ability to support data quality assurance and control activities.	Project Management	Will Meet	Attachment ( - Implementation Specifications Approach	1. Project Management Methodology	427
PM032	1	The solution should be implemented and fully functional prior to the contract close of the existing data warehouse decision support system (DW/DSS).	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	427
PM033	1	The Vendor's quality management approach should be consistent with the Department's policies and procedures	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	427
PM034	1	The Vendor should submit each deliverable to the Department in final form and be ready for signature approval.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	428
PM035	1	The Vendor should submit each project deliverable to the Department in accordance with each date in the project schedule.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	428
PM036	1	The Vendor should work with the Department to develop acceptance criteria for each project deliverable.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	428
РМ037	1	The Vendor should work with the Department's project management vendor regarding all project related activities.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	428
PM038		The Vendor should conduct deliverable walk-throughs for all project deliverables prior to their submission, unless otherwise approved in writing by the Department.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	429
'M039	1	The Vendor should submit all meeting materials to the Department 24 hours prior to each meeting.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	429
M040	1	The Vendor should capture meeting minutes at each meeting.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	429
M041		area o meeting occurs.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	429
M042	1	The Vendor should store and maintain all project documentation in an agreed upon document repository such as a SharePoint location.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	429

WV\_115\_Appendix 1 NEW - Detailed Specifications\_Clean\_12-4-19
Tab 3. Specifications & Responses





		Specifications			Vendor Re	sponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
PIM043	1	The Vendor should make all project documentation accessible to all stakeholders identified by the Department.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1, Project Management Methodology	430
PM044	1	The Vendor should utilize a change management methodology that is based on industry standards and best practices and is approved by the Department.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	430
PM045	1	The Vendor should propose a change management methodology including, but not limited to:	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	430
PM046	2	Approach across all project phases	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	431
PIM047	2	Roles and responsibilities	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	43:
PIMO48	2	Tools necessary to support change management	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	43.
PM049	2	Reporting	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	43
PM050	2	Others as defined by the Department	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project  Management  Methodology	43
PM051	1	The Vendor should propose an organizational change management methodology in support of the Enterprise Data Solution (EDS) implementation.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	43
PM052	1	The Vendor should conduct requirements analysis sessions with the Department during which the Vendor will review, refine, and seek approval for all requirements included in this Request for Proposal (RFP)	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	43
PM053	1	The Vendor should work with the Department to design the system in accordance with the following design phases:	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	43
PM054	2	Preliminary System Design	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	43
PM055	2	Detailed System Design	Project Management	Will Meet	Attachment!- Implementation Specifications Approach	Project     Management     Methodology	43



Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	THE STATE OF		
2	5. 40		was a structure	Attachment	Section	Page #
	Final System Design	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	43
1	The Vendor should be responsible for all costs associated with requirements analysis and solution design.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1 Project Management	43
1	The solution should be developed and implemented in accordance with the project work plan.	Project Management	Will Meet	Attachment I - Implementation	1. Project Management	43
1	The Vendor should detail their approach to both requirements validation and joint application design in support of requirements analysis and solution design activities.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1 Project Management Methodology	430
1	The Vendor should maintain a requirements traceability matrix (RTM) throughout the lifecycle of the project.	Project Management	Will Meet	Attachment I - Implementation	1. Project Management	43
1	The Vendor should provide all stakeholders identified by the Department access to the requirements traceability matrix (RTM).	Project Management	Will Meet	Attachment I - Implementation	1. Project Management	43
1	The Vendor should document in the requirements traceability matrix (RTM) where each requirement is accounted for within the following areas:	Project Management	Will Meet	Attachment I - Implementation	1. Project Management	43
2	Design documentation	Project Management	Will Meet	Attachment I - Implementation	1. Project Management	43
2	Code modules	Project Management	Will Meet	Attachment I - Implementation	1. Project Management	438
2	Test conditions	Project Management	Will Meet	Attachment I - Implementation	1. Project Management	438
2 1	Test scenarios	Project Management	Will Meet	Attachment I - Implementation	1. Project Management	438
2 1	Test cases	Project Management	Will Meet	Attachment I - Implementation	1 Project Management	438
2	Certification criteria	Project Management	Will Meet	Attachment I - Implementation	1. Project Management	439
	1 1 1 2 2 2 2 2	The solution should be developed and implemented in accordance with the project work plan.  The Vendor should detail their approach to both requirements validation and joint application design in support of requirements analysis and solution design activities.  The Vendor should maintain a requirements traceability matrix (RTM) throughout the lifecycle of the project.  The Vendor should provide all stakeholders identified by the Department access to the requirements traceability matrix (RTM).  The Vendor should document in the requirements traceability matrix (RTM) where each requirement is accounted for within the following areas:  Design documentation  Code modules  Test conditions  Test cases	The Solution should be developed and implemented in accordance with the project work plan.  The Vendor should detail their approach to both requirements validation and joint application design in support of requirements analysis and solution design activities.  The Vendor should maintain a requirements traceability matrix (RTM) throughout the lifecycle of the project.  The Vendor should provide all stakeholders identified by the Department access to the requirements traceability matrix (RTM).  The Vendor should document in the requirements traceability matrix (RTM) where each requirement is accounted for within the following areas:  Design documentation  Project Management  Code modules  Project Management  Test conditions  Project Management  Test scenarios  Project Management  Project Management  Project Management	The solution should be developed and implemented in accordance with the project work plan.  The Vendor should detail their approach to both requirements validation and joint application design in support of requirements ranalysis and solution design activities.  The Vendor should maintain a requirements traceability matrix (RTM) throughout the lifecycle of the project.  The Vendor should provide all stakeholders identified by the Department access to the requirements traceability matrix (RTM).  The Vendor should document in the requirements traceability matrix (RTM) where each requirement is accounted for within the following areas:  Design documentation  Project Management  Will Meet  Project Management  Will Meet  Code modules  Project Management  Will Meet  Test conditions  Project Management  Will Meet  Project Management  Will Meet  Test scenarios  Project Management  Will Meet  Project Management  Will Meet  Project Management  Will Meet  Test scenarios  Project Management  Will Meet  Project Management  Will Meet  Project Management  Will Meet  Project Management  Will Meet	The solution should be developed and implemented in accordance with the project work plan.  The Vendor should detail their approach to both requirements validation and joint application design in support of requirements analysis and solution design activities.  The Vendor should maintain a requirements traceability matrix (RTM) throughout the lifecycle of the project.  The Vendor should provide all stakeholders identified by the Department access to the requirements traceability matrix (RTM), where each requirement is accounted for within the following areas:  Design documentation  Project Management  Test conditions  Project Management  Test scenarios  Project Management  Will Meet  Attachment I - Implementation Specifications Approach  Will Meet  Will Meet  Attachment I - Implementation Specifications Approach  Will Meet  Will Meet  Attachment I - Implementation Specifications Approach  Attachment	The Vendor should maintain a requirements traceability matrix (RTM) throughout the lifecyde of the requirements traceability matrix (RTM) where each requirement is accounted for within the following areas:  Design documentation  Design documentation  Project Management  Specifications Approach  Will Meet  Mill Meet  M





		Specifications			Vendor Re	sponse	
Req ID #	Higrarchy Lovel	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
PM069	2	Medicaid Information Technology Architecture (MITA) business areas and processes	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	439
PM070	2	Medicaid Information Technology Architecture (MITA) Standards and Conditions	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	439
PM071	2	Others as defined by the Department	Project Management	Will Meet	Attachment i - Implementation Specifications Approach	Project     Management     Methodology	439
PM072	1	The Vendor should demonstrate through the requirements traceability matrix (RTM) that all documented and approved specifications have been traced throughout the development lifecycle.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	439
PM073	1	The Vendor should work with the Department to fully understand the scope, purpose, and implications of each Request for Proposal (RFP) specification	Project Management	Will Meet	Attachment 1 - Implementation Specifications Approach	Project     Management     Methodology	439
PM074	1	The Vendor should identify and work with the Department to resolve gaps between the Vendor and the Department's understanding of a specification.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	439
PM075	1	The Vendor should conduct the following types of testing in support of the solution:	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	440
PIM076	2	Unit testing	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	441
PM077	2	Integration testing	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	441
PM078	2	Iterative functional testing	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project  Management  Methodology	442
PM079	2	System integration testing (SIT)	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	442
PM080	2	Interface testing	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	442
PM081	2	Regression testing	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1 Project Management Methodology	442



		5pecifications			Vendor F	Response	
Reg ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
PM082	2	End-to-end testing	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	44
PM083	2	Security testing	Project Management	Will Meet	Attachment   - Implementation Specifications Approach	1 Project Management Methodology	44
PM084	2	Performance testing	Project Management	Will Meet	Attachment   - Implementation Specifications Approach	1. Project Management Methodology	44
PM085	2	Usability/Accessibility testing	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	44:
PM086	2	Browser testing	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	443
PM087	2	User acceptance testing (UAT)	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	443
PM088	2	Data conversion testing	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	444
PM089	2	Operational readiness testing (ORT)	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	444
M090	2	Parallel testing	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	445
M091	2	Other testing as identified by the Department and/or Vendor	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	445
M092		The Vendor should be prepared to assist the Department with User acceptance testing (UAT).	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	445
M093	1	The Vendor should be prepared to conduct User acceptance testing (UAT) in all cases whereby the Department does not elect to conduct UAT.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management	445
M094		The Vendor should complete regression testing subsequent to, but not limited to, the following:	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Methodology  1. Project  Management  Methodology	446
M095	2	Deployment of new solution components	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Methodology  1. Project  Management  Methodology	446



		Specifications			Vendor Re	sponse	
Reg ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
PM096	2	Integration of each solution component into the primary solution	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	446
PM097	2	Every migration of new build versions to each test environment	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	446
PM098	2	Solution fixes	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	446
PM099	2	Solution patches	Project Management	Will Meet	Attachment 1 - Implementation Specifications Approach	Project     Management     Methodology	446
PM100	2	Solution releases	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	446
PM101	2	Others as defined by the Department	Project Management	Will Meet	Attachment ! - Implementation Specifications Approach	Project     Management     Methodology	447
PM102	1	The Vendor should utilize a subset of system integration testing (SIT) scenarios representative of maximum functional and technical solution coverage for the purposes of regression testing.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	447
PM103	1	The Vendor should obtain approval from the Department on which system integration testing (SIT) should be used for regression testing.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project  Management  Methodology	447
PM104	1	The Vendor should utilize end-to-end test cases in support of regression testing.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	447
PM105	1	The Vendor should perform security testing on functional, technical, and infrastructure components to ensure the solution meets all State, Department, and Federal security requirements.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	447
PM106	1	The Vendor should propose security testing scenarios and/or cases to the Department for their approval.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	441
PM107	1	The Vendor should supply, on an annual basis, a report of the results of a security risk assessment, including all tools used for the assessment, and an action plan detailing the approach for remediation of security risk vulnerabilities.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	44
PM108	1	The Vendor's performance testing methodology should allow for performance tests to be representative of the expected peak period volumes for solution operation.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	44



		Specifications			Vendor R	esponse	
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	.Section	Page #
PM109	1	The Vendor's performance testing should occur on a production ready version of the solution.	Project Management	Will Meet	Attachment i - Implementation Specifications Approach	1. Project Management Methodology	44
PM110	1	The solution's performance testing environment should mirror the final production solution specifications.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	44
PM111	1	The Vendor's usability/accessibility testing should include testing of the user interface for the following users:	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1 Project Management Methodology	45
PM112	2	Internal users	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	450
PM113	2	External users	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	450
PM114	2	Power users	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	450
PM115	2	Users with limited computer skills	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	450
PM116	2	Prospective new users	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	450
PM117	2	Users who will require solution training to complete their daily work	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	451
PM118	2	Users with disabilities	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	451
M119	2		Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	451
M120	1	The Vendor's usability/accessibility testing approach should account for testing for compliance with sections 504 and 508 of the Americans with Disabilities Act (ADA).	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	451
M121	1	The Vendor's browser testing should be performed using a minimum of a subset of system integration test scripts that ensures maximum solution coverage.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	451
M122	1	The Vendor should supply the data, environments, and test	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	452





		Specifications			Vendor Re	sponse	
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
PM123	1	The Vendor should work with the Department to define user acceptance testing (UAT) cases representative of the full solution environment.	Project Management	Will Meet	Attachment 1 - Implementation Specifications Approach	1. Project Management Methodology	452
PM124	1	The Vendor should be responsible for working with the Department to define the user acceptance test (UAT) scenarios the Department deems as critical for UAT.	Project Management	Will Meet	Attachment 1 - Implementation Specifications Approach	Project     Management     Methodology	452
PM125	1	The Vendor should be responsible for drafting all user acceptance testing (UAT) cases.	Project Management	Will Meet	Attachment 1 - Implementation Specifications Approach	Project     Management     Methodology	452
P <b>M</b> 126	1	The Vendor should review all user acceptance testing (UAT) results with the Department, and a strategy for mitigation should be agreed upon for each defect based on the defect's severity, priority, and impact.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	452
PM127	1	The Vendor should discuss and obtain the Department's approval on data conversion exception tolerance levels prior to the commencement of data conversion testing.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	453
PM128	1	The Vendor should review and obtain the Department's approval of data conversion test results prior to commencement of production data conversion.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	453
PM129	1	The Vendor should propose a source code management tool for review and approval by the Department.	Project Management	Will Not Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	453
PM130	1	The Vendor should work with the Department to define an operational readiness testing (ORT) approach that encompasses all Department and Vendor responsible solution operational processes and procedures.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	454
PM131	1	The Vendor should propose and execute a plan for a phased approach to the solution's development, including all of the solution's components and modules.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	454
PM132	1	The Vendor should propose a solution development plan that includes but is not limited to the following elements:	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	45.
PM133	2	Code base management	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	45
PM134	2	Source code security analysis	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	45
PM135	2	Development standards	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	45



		Specifications	fications Vendor Response				
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	.Section	Page #
PM136	2	Individual developer machine configuration requirements	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	4.
PM137	2	Build machine configuration requirements	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	4
PM138	2	Code check-out and check-in procedures	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	4.
M139	2	Developer tool expectations	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	4.
M140	2	Others as defined by the Department	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	4:
M141	1	The Vendor should develop the solution using an iterative development approach.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	4.
M142	1	The Vendor should review and test in logical functional groups of system components or modules.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	4.
M143	1	The Vendor should ensure that all design documentation is kept current throughout the contract.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	4.
M144		The Vendor should support all data conversion related activities.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	45
M145	1	The Vendor's data conversion strategy should minimize risk and the disruption to other enterprise solutions affected with the solution's development and implementation.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	. 45
M146	1	The Vendor should be responsible for the data cleansing of all data being migrated from the existing data warehouse decision support system (DW/DSS) and converted to the new solution.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	45
M147		The Vendor should propose an industry standard data conversion methodology that includes but is not limited to:	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management	45
M148	2	Data analysis techniques	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Methodology  1. Project  Management  Methodology	45



		Specifications		Vendor Response			
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
PM149	2	Checks and balances for ensuring data quality and accuracy	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	459
PM150	2	Data conversion tool sets	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	459
PM151	1	The Vendor should complete a full analysis of the Department enterprise to understand what source solutions and corresponding data will need to be integrated into the solution.	Project Management	Will Meet	Attachment   - Implementation Specifications Approach	1 Project Management Methodology	460
PM152	1	The Vendor should complete an assessment of the as-is and to- be environment to understand what reports will be needed in support of operations.	Project Management	Will Meet	Attachment I - implementation Specifications Approach	1. Project Management Methodology	460
PM153	1	The Vendor should develop and obtain Department approval of all reports identified as needed in support of operations.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project Management Methodology	460
PM154	1	The Vendor should be prepared to work with the Department to identify and integrate data from the Department-identified primary source solutions.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	1. Project  Management  Methodology	460
PM155	1	The Vendor should propose and manage a process by which data from additional solutions can be identified and integrated into the Enterprise Data Solution (EDS).	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	461
PM156	1	The solution should have the ability to support quality measures as defined by the Department.	Project Management	Will Meet	Attachment I - Implementation Specifications Approach	Project     Management     Methodology	461
SM001	1	The solution should have security controls, safeguards, and alerts to prevent, monitor, and detect potential and actual violations in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.		Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	391
5M002	1	The Vendor should deliver a Security, Privacy, and Confidentiality Plan within 30 calendar days of contract startup.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	391
SM003	1	The Vendor should submit an updated Security, Privacy, and Confidentiality Plan to the Department for review and approval 30 business days prior to the start of solution operations.	Security Management	Will Not Meet	Attachment H - Technical Specifications Approach	4. Security Management	391
SM004	1	The Vendor should perform a review of the Security, Privacy, and Confidentiality Plan annually and submit to the Department for review and approval within 30 calendar days of the review.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	391



		Specifications .			Vendor R	esponse	
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
SM005	1	The Vendor should submit substantive change(s) to the Security, Privacy, and Confidentiality Plan for review and approval within 30 calendar days of the proposed change(s).	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	392
SM006	1	The Vendor should maintain a Department-approved Security, Privacy, and Confidentiality Plan that details how the solution complies with applicable Department, State, and federal security and privacy laws, policies, and/or procedures.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	392
SM007	1	The solution should maintain an audit trail that can be used to identify unauthorized attempts to access the solution and log the IP address from where the intrusion attempt occurred, in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4 Security Management	392
SM008	1	The solution should provide an audit of all attempts to access or use sensitive data, consistent with Health Insurance Portability and Accountability Act (HIPAA), Centers for Medicare & Medicaid Services (CMS), and other Department, State, and federal laws and regulations.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	392
SM009	1	The solution should have the ability to prevent, monitor, and detect malicious software and code.	Security Management	Will Meet	Attachment H - Technical	4 Security	393
SM010	1	The solution should have the ability to provide security incident reporting and mitigation mechanisms according to State and federal requirements and in accordance with the Department's Incident Reporting and Response Policy including, but not limited to:	Security Management	Will Meet	Specifications Approach Attachment H - Technical Specifications Approach	Management 4. Security Management	393
SM011	2	Terminating access and generating a report when a potential security violation is detected	Security Management	Will Meet	Attachment H - Technical	4. Security	394
SM012	2	Preserving and reporting specified audit data when a potential security violation is detected	Security Management	Will Meet	Specifications Approach Attachment H - Technical Specifications Approach	Management 4. Security Management	394
SM013	. 2	Others as defined by the Department	Security Management	Will Not Meet	Attachment H - Technical Specifications Approach	4. Security	394
SM014	1	The Vendor should ensure that any and all security and privacy breaches, incidents, and/or unauthorized disclosures are reported according, to State and federal requirements and in accordance with the Department's incident Reporting and Response Policy.	Security Management	Will Not Meet	Attachment H - Technical Specifications Approach	Management 4. Security Management	394
SM015	1	The solution should have the ability to log all authorized solution user activity and correlate, analyze, and report on all logged user events and associated data.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4 Security Management	395



		Specifications	Vendor Response				
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
SM016	1	The solution should have the ability to provide a report of authorized solution user activity as determined by the Department in the Design, Development, and Implementation (DDI) phase.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	395
SM017	1	The solution should provide an audit trail of record changes, including authorized solution user, date, and time of change.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	395
SM018	1	The solution should have the ability for audit trails to allow information on source documents to be traced through the processing stages to the point where the information is finally recorded.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	395
SM019	1	The solution should have the ability to trace data from the final place of recording back to its source of entry.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	395
SM020	1	The solution should continuously monitor, authorize, document, and allow access only through controlled interfaces for all connections originating from outside the security boundary of the system in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	396
SM021	1	The solution should ensure remote connection is performed using multi-factor authentication in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	396
SM022	1:	The solution should limit data sharing to only those entities and individuals located in the United States and/or U.S. territories that maintain a current data sharing agreement with the Department consistent with Department-required agreements and security and privacy policies and procedures.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	396
SM023	1	The solution should have the ability to control access rights to data and system functions based on authorized solution user role based access.	-Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	396
SM024	1	The Vendor should work with the Department to define the process for access to the solution in the Design, Development, and Implementation (DDI) phase.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	397
SM025	1	The solution should support role-based user access.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	397
SM026	1	The solution should provide an interactive, adjustable time-out feature for authorized solution user inactivity in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	397



		Specifications Vendor Response					
Req ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
SM027	1	The solution should provide alerts to authorized solution users that inactivity will result in being timed out after the specified period of inactivity in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	397
SM028	1	The solution should have the ability to enforce password policies for length, character requirements, and required updates in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	397
SM029	1	The solution should store passwords in encrypted form in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	397
SM030	1	The solution should permit system administrators to reset authorized solution user passwords.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	398
SM031	1	The solution should allow authorized solution users to reset their own passwords at any time by following system-defined standards in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	398
SM032	1	The solution should permit authorized solution users to set and modify user security access profiles.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	398
SM033	1	The solution should have the ability to supply authorized data sets to authorized solution users.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	398
SM034	1	The solution should have the ability to provide an audit log that identifies amendments to the designated record set for an authorized solution user.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	399
SM035	1	The solution should have the ability to store audit logs of authorized solution user activity in a location determined by the Department in the Design, Development, and Implementation (DDI) phase.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	399
SM036	1	The solution should establish responsibilities and procedures for remote use in compliance with Department security policy.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	399
SM037		The solution should block pop-ups, spam, advertisements, and malware.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	399
SM038	1	The solution should have the ability to remove or disable systems, services, components, and modules as defined by the Department.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	399
SM039	1	The solution should have secure transmission and data integrity controls to detect improper modification of transmitted information.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4 Security Management	399





		Specifications			Vendor R	esponse	
Reg ID II	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
SM040	1	The solution should use Secure Sockets Layer (SSL) certificates that are consistent with State and federal requirements for data in transit.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	400
SM041	1	The solution should have the ability to restrict release of sensitive data.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security	400
SM042	1	The solution should support data integrity by preventing and detecting unauthorized alteration or destruction.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	Management 4. Security	400
SM043	1	The Vendor should maintain procedures that ensure all emergency and non-emergency production system changes follow a Department-approved change control process, including a risk analysis.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	Management 4. Security Management	403
SM044	1	The solution should support record, database, table, and field-level access.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security	401
SM045	1	The solution should support secure file and folder access.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	Management 4. Security Management	402
SM046	1	The solution should support workforce privacy and security awareness through such methods as security reminders, training reminders, online training capabilities, and/or training tracking.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	402
SM047	1	The Vendor should collaborate with the Department to determine a security approach that integrates with other solution components to supply role-based single-sign-on access.	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	402
SM048	1	The solution should have the ability to provide authorized solution users access to view and audit records of changes to free-form text data fields by capturing information including, but not limited to:	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	402
SM049	2	The name of the authorized solution user who updated a field	Security Management	Will Meet	Attachment H - Technical	4. Security	402
5M050	2	The date and time a field was updated	Security Management	Will Meet	Specifications Approach Attachment H - Technical	Management 4. Security	402
5M051			Security Management	Will Meet	Specifications Approach Attachment H - Technical	Management 4. Security	403
5M052	1	The solution should have data encryption standards in accordance with Department, State, and federal security and privacy laws, policies, and/or procedures.	Security Management	Will Meet	Specifications Approach Attachment H - Technical Specifications Approach	Management 4. Security Management	403
iM053	1	The Vendor should provide documentation on how the solution governs the confidential nature of information about applicants and members, including the legal sanctions that can be provided, to the State, applicants, members, and other persons and agencies to whom information is disclosed.	Security Management	Will Not Meet	Attachment H - Technical Specifications Approach	4. Security Management	403

WV\_115\_Appendix 1 NEW - Detailed Specifications\_Clean\_12-4-19 Tab 3. Specifications & Responses

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		Specifications :			Vendor Re	sponse	
Req ID W	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
SM054	1	The vendor should be prepared to demonstrate how the solution of interest supports regulations governing the safeguard of information about applicants and beneficiaries including, but not limited to:	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	403
SM055	2	Names	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security  Management	403
SM056	2	Addresses	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	403
 SM057	2	Medical services provided	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	403
 SM058	2	Social and economic conditions or circumstances	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	403
SM059	2	Agency evaluation of personal information	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	403
SM060	2	Medical data, including diagnosis and past history of disease or	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	404
 SM061	2	Any information received for verifying income eligibility and	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	404
SM062	2	amount of medical assistance payments  Any information received in connection with the identification of	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	404
SM063	2	legally liable third party resources  Others as defined by the Department, State, and federal security	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	404
SM064	2	and privacy policies Others as defined by the Department	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	404
SM065	1	The Vendor should be prepared to demonstrate that the solution supports safeguarding income information that is received from the Social Security Administration (SSA) or the Internal Revenue	Security Management	Will Not Meet	Attachment H - Technical Specifications Approach	4. Security Management	404
SM066	1	Service (IRS).  The solution should disable accounts after three consecutive invalid log in attempts and protect against further user authentication attempts using a Department approved lock-out	Security Management	Will Meet	Attachment H - Technical Specifications Approach	4. Security Management	404
TN001	1	mechanism.  The Vendor should provide a sandbox training environment for authorized solution users within the solution that uses de-identified data and is compliant with the Health Insurance Portability and Accountability Act (HIPAA), Department, and other State and federal regulations.	Training	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	499
TN002	1	The Vendor should develop and maintain a sandbox environmen for training that mirrors production.	t Training	Will Meet	Attachment 1 - Implementation Specifications Approach	1.7 Training Approach	



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		Specifications			Vendor Re	sponse	
Req ID #	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #
TN003	1	The solution's training environment should have the capacity support all components of the solution	to Training	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	500
TN004	1	The Vendor should ensure that no aspect of training uses protected health Information (PHI), personally identifiable information (PII), or federal tax Information (FTI), and that the training materials and environments are compliant with the Health Insurance Portability and Accountability Act (HIPAA), Department, and other State and federal regulations.	Training	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	500
TN005	1	The Vendor should provide the necessary training and ongoir support to all Department authorized solution users participa in data conversion validation and user acceptance testing (U/of the solution components, reporting options, and data structure.	ting	Will Meet	Attachment I - Implementation Specifications Approach	1,7 Training Approach	500
TN006	1	The Vendor should provide initial and ongoing training and associated reference documentation to authorized solution to the duration of the contract, at the request of the Department.	Isers Training	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	500
TN007	1	Throughout the duration of the contract, the Vendor should provide regular training sessions for authorized solution user updated or new functionality and/or business processes related the solution, at the request of the Department.	TITALIIIIK	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	500
TN008	1	The Vendor should track and provide confirmation of attend at all training sessions and report on which versions of training materials were presented at the training.	1	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	500
TN009	1	The Vendor should provide evaluation feedback forms to tra participants at the end of each training and provide summar these evaluations to the Department.		Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	501
TN010	1	The Vendor should provide hands-on, in-person, remote, an online training.	d/or Training	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	501
TN011	at c	The Vendor should provide Department-approved, commercavailable training and/or guide books addressing all compon of the solution and provide to the Department at least four copies of each book for distribution as well as online electrocopies.	ents   4)   Training	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	501
TN012	1	The Vendor should ensure that all Department-approved tra documentation for the solution is posted where authorized solution users can access it on demand.	Ining Training	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	501

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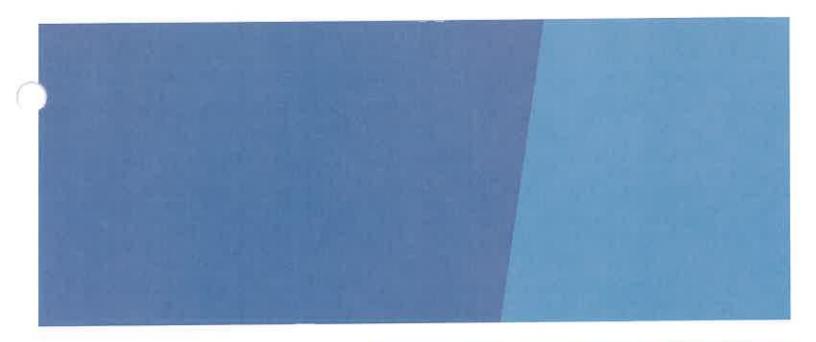


		Specifications			Vendor R	espanse		
Reg ID#	Hierarchy Level	Specification Text	Subject Matter Area	Capability Assessment	Attachment	Section	Page #	
TN013	1	The Vendor should propose a role-based training approach.	Training	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	501	
TN014	1	The Vendor should develop training materials that support each training.	Training	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	501	
TN015	1	The Vendor should conduct training evaluations that provide feedback on the effectiveness of each training.	Training	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	502	
TN016	1	The Vendor should provide as-is necessary the training facilities and equipment to best ensure the training's success.	Training	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	502	
TN017	1	The Vendor should provide user acceptance testing (UAT) training.	Training	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	502	
TN018	1	The Vendor should provide train-the-trainer training sessions.	Training	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	502	
ΓN019	1	The Vendor should support all aspects of training that the Department and Vendor agree are key towards the trainings delivery.	Training	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	503	
TN020	1	The solution's training environments should be reflective of real- world data.	Training	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	503	
Γ <b>N</b> 021	1	The solution's training environments should include end-to-end training on processes during applicable phases of the project.	Training	Will Meet	Attachment I - Implementation Specifications Approach	1.7 Training Approach	503	



	Vendor Response - Capability Assessment
Capability Assessment	Description
Will Meet	Specification will be met by the Vendor
Will Not Meet	Specification will not be met by the Vendor

CHICAGO CONTRACTOR CON	Response Templates
Response Template	Description
Attachment A	Cost Workbook
Attachment B	Title Page, Executive Summary, Subcontractor Letters, and Table of Contents
Attachment C	Vendor Qualifications and Experience
Attachment D	Project Organization and Staffing
Attachment E	Initial Work Plan
Attachment F	Mandatory Requirements
Attachment G	Business Specifications Approach
Attachment H	Technical Specifications Approach
Attachment I	Implementation Specifications Approach
Attachment J	Maintenance and Operations Specifications Approach
Attachment K	Terms and Conditions





# Draft Initial Staffing Plan

West Virginia Department of Health and Human Services Enterprise Data Solution Project



# **Table of Contents**

1. Introduction	1
2. Purpose	-
3. Roles and Responsibilities	
4. Staffing Management	11
5. Approach to Resources on Location	11
6. Staffing Tools and Processes	12
7. Acronyms and Definitions	12
8. Revision History	12





#### 1. Introduction

Cerner's Staffing Plan provides coordination and collaboration to ensure all project staffing, resources, and personnel changes are understood by both Cerner and DHHS. The Staffing Plan ensures that the EDS Project has sufficient staff with the right skills and experience to ensure successful completion. This methodology applies Project Management Body of Knowledge (PMBOK) best practices that will aid in the management and monitoring of allocation and activities throughout project implementation. Cerner's project manager will maintain this plan throughout the life of the project, making updates as needed, and following the established change management process.

#### 2. Purpose

The purpose of the Staffing Plan is to:

- Identify key staff for the project
- Address staffing management
- Identify the roles and responsibilities of team members

## 3. Roles and Responsibilities

Defining the roles and responsibilities is key to the success of each project. The following tables detail the project roles and key responsibilities, represent the key personnel that are required to execute the project, and present the estimated effort in Full Time Equivalents (FTE) required by month for each key staff resource assigned to the project. This section also outlines which leveraged resources Cerner will bring to the project during each phase. The project team will engage resources as needed to ensure a successful project.

Should the need arise to replace any of the resources for the project, Cerner's project manager will escalate the need of replacement to executive leadership. Executive leadership will work with the Cerner recruiting team to fill the position with an equally qualified associate. Through this process, Cerner will keep DHHR informed about the status of the search and will follow any contractual obligations for interim or replacement staffing.

If Cerner's project manager were to vacate the role, Cerner's executive leadership would designate a project team member to serve as the main point of contact until Cerner identified a project manager with the qualifications outlined in the contract. Once the new project manager started, the temporary project manager would collaborate to transfer knowledge of the current project status and project artifacts.

In the case of a temporary vacancy (e.g. personal time off, medical leave), Cerner's project manager will evaluate the team member's planned activities and the skill set needed to complete those activities. When this evaluation is complete, the project manager will work with Cerner's executive leadership, including leadership on any affected solution teams, to identify a backfill to continue the activities through the absence. The project manager will ensure the appropriate knowledge transfer happens between the team member and the replacement. The project manager will monitor the planned activities during the absence to ensure progress continues, activities are completed, and project timelines are not affected.



If the project manager's position will be temporarily vacant, Cerner's project manager will meet with Cerner's executive leadership prior to the absence to designate a temporary replacement and will work to ensure the appropriate knowledge transfer happens before the absence begins. The designated replacement will assume all the responsibilities of the project manager. When the project manager returns, the replacement will debrief the project manager on project status and provide any updates.

Table 1. Project Team Roles and Responsibilities

Relie	Responsibilities
Account Manager*	Establishes and maintains a positive relationship between Cerner and DHHR. Responsible for the coordination of all contract issues under this contract. Meets with the DHHR program manager and/or others necessary to resolve any conflicts, disagreements, or other contract issues. Makes binding decisions pursuant to this contract for Cerner and approves change orders for Cerner. Ensures timely completion of the project and meeting all contractual obligations.
Project Manager*	Main point of contact for DHHR throughout the project. Provides on-site management of the project. Responsibility for scope management, staffing, task assignments, change management, risk and issues, reporting on performance metrics, and communications on all aspects of the project. Performs quality control/assurance on scheduling and staffing processes and holds responsibility for ensuring overall project quality control/assurance activities are conducted.
Business Lead*	Manages the Requirements Traceability Matrix (RTM). Prepares for and leads requirements validation (RV) sessions. Manages tasks and performs quality assurance on the work of Cerner's business analysts. Serves as a liaison between Cerner's content development resources and DHHR's business users, to ensure reporting meets the needs of the users.
Technical Lead*	Manages configuration, integration, defect management, and implementation of data and reporting. Performs quality control/assurance or data ingestion/integration processes and analytics content. Serves as primary subject matter expert on technical requirements and deliverables.
Implementation Manager*	Plans, executes and monitors the Project Work Plan during implementation. Coordinates with DHHR on implementation tasks. Oversees the development of the Project Management Plan and related deliverables. Manages changes, risks, and issues during implementation. Provides weekly and monthly status updates.
Operations Manager*	Manages schedule and resources during the transition from implementation and throughout operations. Coordinates with DHHR on operations and maintenance tasks. Manages changes, risks, and issues during operations. Provides weekly and monthly status updates.
Certification Lead*	Key contact for certification. Develops and manages the Federal Certification and Review Management Plan. Manages risks/issues for certification. Communicates key information with Centers for Medicare and Medicaid Services (CMS), Independent Verification and Validation (IV&V), and project leadership. Provides certification status updates to leadership. Has up-to-date, in-depth knowledge of the current Medicaid Enterprise Certification Toolkit (MECT) certification life cycle. Performs quality control/assurance on certification artifacts and processes. Prepares for and leads certification reviews.



Documentation Management Lead	Establishes methodology and oversees processes related to documentation. Develops and manages the Documentation Management Plan. Supports development of Deliverable Expectations Documents (DEDs) and deliverables. Helps align Cerner and industry best practice with DHHR requirements. Performs quality control/assurance on deliverables.
Quality Assurance Manager*	Oversees all quality control/assurance activities for the project and serves as the main point of contact for quality questions or issues. Develops and manages the Quality Management Plan. Reports to DHHR on quality control/assurance results, including results that relate to Service Level Agreements (SLAs).
Testing Manager	Oversees all testing activities for the project and serves as the main point of contact for testing. Develops and manages the Master Test Plan. Conducts testing workshops. Coordinates the development of the test scripts. Communicates key information with testing resources and project leadership. Manages risks/issues for testing. Provides testing status updates to leadership. Has in-depth knowledge of the testing life cycle and all associated artifacts. Performs quality control/assurance on test cases, test scripts, test reports, and testing processes.
Information Security (IS) Architect/Privacy Data Protection (PDP) Officer	Key contact on any security or privacy concerns that arise over the course of the project. Provides information needed for security audits. Ensures any incidents are communicated promptly and manages mitigation and improvements as applicable.
Leadership/Advisors	Provide leadership for decision-making efforts. Manage escalations or issues. Provide governance and guidance to key work streams. Define quality metrics to meet the purpose of the project.
Technical Writer	Works with subject matter experts to develop Deliverable Expectations Documents (DEDs) and deliverables. Manages delivery and tracking of documents, following the Documentation Management Plan
Agile Project Manager	Oversees Agile development methodology. Works with project leadership to prioritize and assign tasks to Agile teams. Communicates progress to leadership.
Engagement Controller	Supports the project manager with communication, coordination and reporting activities
Clinical Strategist	Facilitates discussions around clinical alignment. Monitors and manages the workflows for the EDS project. Partners with DHHR and consultants to develop complex, integrated, multi-role and multi-department workflows.
Solution Architect	Collaborates with DHHR to define data strategy for the project. Builds an inventory of existing and new data needed to implement the architecture. Develops data models and implement measures to ensure data accuracy and accessibility. Monitors, refines, and reports on the performance of data management systems. Merges new systems with existing warehouse structures.
HealtheAnalytics Solution Consultants/Report Writer	Supports the build/configuration of solution(s) with venue and workflow knowledge for specific functional area. Provides gap analysis and proposals to stakeholders. Provides risks/issues to project manager. Provides training to identified groups. Performs quality control/assurance on solution configuration.
HealtheRegistries Solution Consultant	Supports the build/configuration of solution(s) with venue and workflow knowledge for specific functional area. Provides gap analysis and proposals to stakeholders. Provides risks/issues to project manager. Provides training to identified groups. Performs quality control/assurance on solution configuration.
Data Science Consultant (HealtheDataLab)	Apply statistical theory, mathematical methods, and the scientific method to solve problems. Determines methods for finding or collecting data, including



	collaboration with data are trate and a state and
	collaboration with data analysts and engineers to access existing sources. Analyzes and interprets data and reports conclusions from analyses. Provides risks/issues to project manager. Provides training to identified groups. Performs quality control/assurance on solution configuration.
Reporting Strategist	Responsible for design, specifications documentation, and general oversign of reports
Federal Reporting Consultant	Drives strategy related to federal reporting needs and activities. Analyzes business and DHHR processes to integrate and align solutions to DHHR needs. Advises on workflow across service lines. Consults on design decision impacts and contribute to strategic plans for obtaining value. Supports business operations reporting needs as well as standard reporting capabilities such as Federal Medicaid reporting and Administrative Reporting (MAR).
T-MSIS Reporting Consultant	Drives strategy related to Transformed Medicald Statistical Information System (T-MSIS) needs and activities. Consults with DHHR on design decision impacts and contributes to strategic plans for obtaining value.
Technical Project Manager	Manages communication and processes related to execution by Cerner technical work streams: data onboarding, solution configuration, identity management.
Platform/Integration Architect	Responsible for platform strategy and technical integration needs, including strategic conversations with partner vendors.
Interface/Data Architect	Designs, builds, and tests the transfer of data between systems. Develop data mapping/modeling.
Tester	Develops and executes test scripts to validate functionality. Documents and maintains evidence of testing and provides testing updates to stakeholders. Facilitates defect resolution and validation. Coordinates with testing manager to ensure testing is delivered according to standards and project timeline.
Identity Management Architect	Assess and complete system access requests and resolve technical access issues while adhering to corporate information security standards, DHS procedures and service level agreements (SLAs). Work with system and platform administrators and management to define appropriate system access requirements for various types of access.
Knowledge and Terminology Team	Develops terminology content and programs for rules, registries, or analytics. Reviews the accuracy of registry measures and concepts, validates alignment to codes, and updates measure configuration as needed.
Ancillary Design Team	Reviews and confirms business rule/algorithm requirements and develops configuration requirements pages for reference.
Programs and Synapse Team	Codes solutions to configuration workbook specifications.
Proprietary Code Standardization Team	Draws on clinical knowledge to map and group data across multiple standard terminologies and specialty domains. Reviews proprietary codes or industry standard documentation to verify that correct medical terminologies are being utilized.
Software Engineer (T- MSIS)	Writes code, test, and debug new software. Participates in code reviews and identify basic issues or deviations from best practices. Develops knowledge of assigned solution, technologies, development processes, and ecosystem.
Compliance Manager	Provides direction and guidance to organizational leaders and management on compliance and regulatory matters. Identifies potential issues or risks and collaborates with leadership to develop and implement contingency plans.



Security Manager	Monitors compliance to security policies to ensure compliance with all applicable regulatory statutes, industry best practices, and corporate business strategies. Supports development of security requirements by evaluating business strategies and requirements, researching information security standards, performing threat modeling and risk assessments, studying architecture and platform, identifying integration issues, and preparing cost estimates.
Organizational Change Management (OCM) Consultant	Collects and analyzes data through interview, observation, and information discussion to understand DHHR culture, success factors, and barriers. Conducts impact analyses, assesses change readiness, and identifies key stakeholders. Builds strategies to support adoption of the changes required by the project.
Operations Solution Consultant	Provides operations support for management of solution(s). Provides risks/issues to project manager. Provides training to identified groups. Performs ongoing quality control/assurance on solution configuration.
Program Integrity Lead	Manages communication and processes related to the Program Integrity work streams. Coordinates with DHHR and oversees the development of deliverables. Manages changes, risks, and issues. Provides weekly and monthly status updates.
Program Integrity Architect	Manages configuration, integration, defect management, and implementation of Program Integrity functionality. Provides subject matter expert on technical requirements and deliverables.
Program Integrity Consultant	Supports the build/configuration of solution(s) with venue and workflow knowledge for specific functional area. Provides gap analysis and proposals to stakeholders. Provides risks/issues to lead/project manager. Provides training to identified groups. Performs quality control/assurance on solution configuration.

<sup>\*</sup>Designates key personnel role

Table 2. Staff Assigned to the Roles

Role	Nameé Resource
Account Manager*	Stan Park, PMP
Project Manager*	Ashok Ramanjanappa, PMP
Business Lead*	Ross Merritt, MPH
Technical Lead*	Nathan Gray
Implementation Manager*	Anil Kalia, PMP
Operations Manager*	Anil Kalia, PMP
Certification Lead*	Jim Peresta
Documentation Management Lead	Scott McLeroy
Quality Assurance Manager*	Amy Henry, PMP
Testing Manager	Lauren Eckhard, MPA, PMP
IS Architect/PDP Officer	Chris Adams, CISSP
Leadership/Advisors	Jennifer Conner; Jake Engle; Dustin Bennett; Angle Glotstein, RN; Zach Behlmann, PMP
Technical Writer	TBD
Agile Project Manager	TBD



Engagement Controller	TBD
Clinical Strategist	Jodi Briggs, RN, BSN, CCN
Solution Architect	TBD
HealtheAnalytics Solution Consultants/Report Writers	TBD
HealtheRegistries Solution Consultants	TBD
Data Science Consultants (HealtheDataLab)	Kyle Gagnon, PhD; Aaron Noli, MD
Reporting Strategists	Kirsten Hagemann, MPH, MBA, Tenike Kuhns
Federal Reporting Consultant	Debra Jones, MISM, MBA
T-MSIS Reporting Consultant	Rhonda Jesse
Technical Project Manager	TBD
Platform/Integration Architect	TBD
Interface/Data Architect	TBD
Tester	TBD
Identity Management Architect	TBD
Knowledge and Terminology Team	TBD
Ancillary Design Team	TBD
Programs and Synapse Team	TBD
Proprietary Code Standardization Team	TBD
Software Engineer (T-MSIS)	TBD
Compliance Manager	TBD
Security Manager	TBD
OCM Consultant	TBD
Operations Solution Consultant	TBD
Program Integrity Consultant	TBD

<sup>\*</sup>Designates key personnel role/resource



Table 3. Cerner Project Roles' Estimated Effort Required by Year, in Hours

	Base Years							Option Years		
	DDI	001	M&O	OSM	OSM	M&O	M&O	OSM	08M	
Cerner Role	CY1	CY2	CY2	GY3	CY4	GY5	CY6	CY7	CYR	
*Account Manager	2000	1000	1000	1000	1000	1000	1000	1000	1000	
*Project Manager	2000	1000	1000	1000	1000	1000	1000	1000	1000	
*Business Lead	2000	1000	1000	1000	1000	1000	1000	1000	1000	
*Technical Lead	2000	1000	1000	500	500	500	500	500	500	
*Implementation Manager / Operations Manager	2000	1000	1000	2000	2000	2000	2000	2000	2000	
*Certification Lead	2000	1000	1000	500	500	500	500	500	500	
Documentation Management Lead	2000	1000	1000	500	500	500	500	500	500	
*Quality Assurance Manager	2000	1000	1000	500	500	500	500	500	500	
*Testing Manager	2000	1000	1000	1000	1000	1000	1000	1000	1000	
*IS Architect / PDP Officer	2000	1000	1000	1000	1000	1000	1000	1000	1000	
Leadership/Advisors	2000	1000	1000	500	500	500	500	500	500	
Technical Writer	2000	1000	1000	500	500	500	500	500	500	
Agile Project Manager	1500	750	750	1000	1000	500	500	500	500	
Engagement Controller	2000	1000	1000	1000	1000	1000	1000	1000	1000	
Clinical Strategist	500	250	250	200	200	200	200	200	200	
Solution Architect	4000	2000	2000	4000	4000	4000	4000	4000	4000	
HealtheAnalytics Solution Consultants/Report Writers	6000	3000	3000	2000	2000	2000	2000	2000	2000	
HealtheRegistries Solution Consultants	2000	1000	1000	400	400	400	400	400	400	
Data Science Consultants (DataLab)	2000	1000	1000	1000	1000	1000	1000	1000	1000	
Reporting Strategists	2000	1000	1000	500	500	500	500	500	500	
Federal Reporting Consultants	4000	2000	2000	1000	1000	1000	1000	1000	1000	



	DDI	114500	O&M Base Years 152,100				O&M Option Years 105,900			
Total Hours	74000	40500	40500	37900	37600	36100	36100	36100	36100	
Operations Solution Consultants	0	1500	1500	4000	4000	4000	4000	4000	4000	
OCM Consultant	2000	1000	1000	1500	1200	1200	1200	1200	1200	
Security Manager	2000	1000	1000	2000	2000	2000	2000	2000	2000	
Compliance Manager	2000	1000	1000	2000	2000	2000	2000	2000	2000	
Software Engineer (T-MSIS)	1000	1500	1500	500	500	500	500	500	500	
Proprietary Code Standardization Team	1000	500	500	100	100	100	100	100	100	
Programs and Synapse Team	2000	1000	1000	100	100	100	100	100	100	
Ancillary Design Team	1000	500	500	100	100	100	100	100	100	
Knowledge and Terminology Team	1500	750	750	100	100	100	100	100	100	
IdM Architect	200	100	100	100	100	100	100	100	100	
Testers	4000	2000	2000	2000	2000	1000	1000	1000	1000	
Interface / Data Architects	6000	3000	3000	3000	3000	3000	3000	3000	3000	
Platform / Integration Architect	1000	500	500	200	200	200	200	200	200	
Technical Project Manager	300	150	150	100	100	100	100	100	100	
TMSIS Reporting Consultants	2000	2000	2000	1000	1000	1000	1000	1000	1000	

Table 4. Program Integrity (PI) Project Roles' Estimated Effort Required by Year, in Hours

		Base Years							Option Years			
	DDI	DDI	08M	OSM	08M	O&M	O&M	O&M	M&O			
Tyler/Pulselight Role	CY1	CY2	CY2	CY3	CY4	CY5	CY6	CY7	CY8			
Pl Analytics Lead	1500	750	750	1000	1000	1000	1000	1000	1000			
PI Analytics Consultant (BA)	2000	125	125	250	250	250	250	250	250			
PI Analytics Data Architect	1000	125	125	250	250	250	250	250	250			
PI Analytics Software Engineer	1500	50	50	100	100	100	100	100	100			



	DO	1 21750		O&M Base Years 13800				OSM Option Years 11400		
Total Hours	19350	2400	2400	3800	3800	3800	3800	3800	3800	
PI Case Management Advisors	500	50	50	100	100	100	100	100	100	
PI Case Management Security Analyst	200	25	25	50	50	50	50	50	50	
PI Case Management Database Administrator	100	25	25	50	50	50	50	50	50	
PI Case Management Technical Writer	200	50	50	100	100	100	100	100	100	
PI Case Management Quality Assurance Analyst	2000	50	50	100	100	100	100	100	100	
PI Case Management Software Engineer	3000	125	125	250	250	250	250	250	250	
PI Case Management Consultant (BA)	2000	. 125	125	250	250	250	250	250	250	
PI Case Management Lead	2000	750	750	1000	1000	1000	1000	1000	1000	
PI Analytics Advisors	750	50	50	100	100	100	100	100	100	
PI Analytics Technical Writer	1000	50	50	100	100	100	100	100	100	
PI Analytics Data Analyst	1600	50	50	100	,100	100	100	100	100	



Table 5. DHHR and IV&V Project Roles' Estimated Effort Required by Year, in Hours

	Base Years							Option Years			
	DDI	DDI	O&M	O&M	M&O	08M	O&M	O&M	O&M		
DHHR/IV&V Role	GY1	CY2	GY2	CY3	CY4	CY5	CY6	CY7	CY8		
Project Manager	2000	1000	1000	1000	1000	1000	1000	1000	1000		
Program Director/Executive Sponsor	4000	250	250	3000	3000	3000	3000	3000	3000		
PMO	6000	2000	2000	4000	4000	4000	4000	4000	4000		
Business/Data Analysts	2000	3000	2750	1000	1000	1000	1000	1000	1000		
Program SMEs	2000	1000	1000	1000	1000	1000	1000	1000	1000		
Security Analyst/Identity Management Lead	500	250	250	250	100	100	100	100	100		
IV&V*	150	-	m.	-	-		-		-		
Total Hours	14500	7500	7250	9100	9100	9100	9100	9100	9100		
	DDI 22000			O&M Base	Years 34550		O&M Option Years 27,300				



#### 4. Staffing Management

This section will provide an overview of Cerner's staffing management approach. The specific staffing requirements for the EDS will be outlined in the contract between Cerner and DHHR. Cerner's project manager will review the requirements and develop the staffing management plan to ensure resources have been appropriately allocated based on contractual and functional requirements. The project manager will work with subject matter experts to estimate the resources needed to fulfill the requirements, based on historical data. Staffing management is an on-going process that occurs throughout the project. The project manager will perform further analysis of staffing needs in response to any changes in the project. Resources are staffed as needed to ensure that the project executes based on the project plan, within time and within budget.

Should a key personnel role become vacant, the project manager will immediately inform DHHR and will provide ongoing updates about the replacement process. Should the project manager role become vacant, executive leadership would immediately designate a project team member to provide this ongoing communication. We will ensure a replacement is in place for the key personnel role within ten business days of the vacancy and will ensure a permanent replacement is in place within sixty business days. We will track changes to all key personnel in the Project Contact List on the Project Portal. It can be found on the left navigation bar or accessed through the following link:

#### **Project Contact List**

Associates allocated to the project will be provided with onboarding information on the EDS Project. Information provided will include, but is not limited to:

- Background of the project
  - Scope of project
    - Solution(s) overview
  - EDS Request for Proposals (RFP)
  - Cerner Proposal
  - Stakeholder list
- Governance process(es)
- Review of project
  - Project plan overview
    - Events
    - Milestones
    - Status meetings
    - Security protocols
  - Risk/Issues
- Job responsibilities and expectations

### 5. Approach to Resources on Location

Cerner's goal in proposing a staffing model for the EDS project is to provide a team with deep experience in both Medicaid and Cerner's solutions while also managing costs to DHHR. To that end, we propose a flexible model...



The project manager and applicable key personnel will be on location for all consulting events, for monthly executive status reviews during months where there aren't consulting events, and also as requested by Client for other events or meetings.

- 1. All consulting events (listed in the Project Work Plan)
- Monthly Executive Status Reviews: only for months where there are not consulting events scheduled
- As requested for other events or meetings, with consideration of advanced notice (unless in the case an emergency) to avoid excessive cost

#### 6. Staffing Tools and Processes

Cerner is committed to creating a diverse environment. It is our policy to take affirmative action to employ and advance in employment qualified minorities, females, protected veterans, and individuals with disabilities. We recruit, hire, develop, and promote associates based on individual ability, integrity, job performance, and potential.

Cerner's Human Resources and Recruiting Departments employ strict recruiting and hiring procedures. Candidates are sourced from an internal recruiting database, as well as from multiple external sources including, but not limited to, Medicaid-specific sources. Additionally, Cerner has established relationships with third-party recruiting firms who focus heavily on the MMIS and Medicaid market.

We review a candidate's resume, followed by a phone screening and, at a minimum, three face-to-face interviews. Following the interviews, Cerner Recruiting leads a formal debrief for each candidate. A consensus must be in place before proceeding with the candidate. In the case of hiring for a key personnel position, the project manager will provide the candidate's materials to DHHR staff to participate in discussions and approve the replacement.

Upon offer and acceptance by a candidate internal to Cerner, transition discussions occur between recruiting and management. Once the associate transitions to the team, several weeks of onboarding specific to Population Health and State Government processes (including a detailed review of the current project) take place.

Upon offer and acceptance by an external candidate, a formal background check (including drug screening) must be completed. Once hired, an external candidate completes the two-day Cerner orientation class and several weeks of onboarding specific to Population Health and State Government processes (including a detailed review of the current project).

### 7. Acronyms and Definitions

Acronym	Definition
CMS	Centers for Medicare and Medicaid Services
DED	Deliverable Expectations Document
FTE	Full Time Equivalent
IS	Information Security
IV&V	Independent Verification and Validation
MAR	Management and Administrative Reporting
MECT	Medicaid Enterprise Certification Toolkit



ОСМ	Organizational Change Management
PDP	Privacy Data Protection
РМВОК	Project Management Body of Knowledge
RFP	Request for Proposal
RTM	Requirements Traceability Matrix
RV	Requirements Validation
SLA	Service Level Agreement
T-MSIS	Transformed Medicaid Statistical Information System

# 8. Revision History

Version	Primary suthor(s)	Description of version	Date completed
<u> </u>			

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
0	0	West Virginia DHHR - EDS Project	358,700 hrs	1244 days	Mon 5/4/20	Mon 5/5/25	
1	1	Project Initiation and Project Planning	7,913 hrs	20 days	Mon 5/4/20	Tue 6/2/20	
2	1.1	Project Management	2,000 hrs	10 days	Mon 5/4/20	Mon 5/18/20	
3	1.1.1	Baseline Review of Current Project Documentation	1,000 hrs	10 days	Mon 5/4/20	Mon 5/18/20	Cemer, DHHR, IV&\
4	1.1.2	Establish Project Infrastructure and Tools	1,000 hrs	10 days	Mon 5/4/20	Mon 5/18/20	Cerner, DHHR, IV&
5	1.2	Events	3,960 hrs	19 days	Tue 5/5/20	Tue 6/2/20	Ī
6	1.2.1	Project Kick Off Meeting	240 hrs	1 day	Tue 5/5/20	Tue 5/5/20	
7	1.2.1.1	During the Event	240 hrs	1 day	Tue 5/5/20	Tue 5/5/20	
8	1.2.1.1.1	Align Stakeholders	40 hrs	1 day	Tue 5/5/20	Tue 5/5/20	Cemer, DHHR, IV&V
9	1.2.1.1.2	Establish Governance	40 hrs	1 day	Tue 5/5/20	Tue 5/5/20	Cerner, DHHR, IV&
10	1.2.1.1.3	Review Priorities/Timelines	40 hrs	1 day	Tue 5/5/20	Tue 5/5/20	Cemer, DHHR, IV&
11	1.2.1.1.4	DHHR Expectations and Success Factors	40 hrs	1 day	Tue 5/5/20	Tue 5/5/20	Cerner, DHHR, IV&
12	1.2.1.1.5	Roles and Responsibilities	40 hrs	1 day	Tue 5/5/20	Tue 5/5/20	Cemer, DHHR, IV&\
13	1.2.1.1.6	Introduction to Workstreams	40 hrs	1 day	Tue 5/5/20	Tue 5/5/20	Cerner, DHHR, IV&
14	1.2.1.2	Outputs	0 hrs	0 days	Tue 5/5/20	Tue 5/5/20	
15	1.2.1.2.1	Data Readiness	0 hrs	0 days	Tue 5/5/20	Tue 5/5/20	
16	1.2.1.2.2	Solution Readiness	0 hrs	0 days	Tue 5/5/20	Tue 5/5/20	
17	1.2.1.2.3	Strategy Readiness	0 hrs	0 days	Tue 5/5/20	Tue 5/5/20	
18	1.2.1.2.4	Project Management Readiness	0 hrs	0 days	Tue 5/5/20	Tue 5/5/20	
19	1.2.2	Foundations Event	240 hrs	1 day	Wed 5/6/20	Wed 5/6/20	
20	1.2.2.1	During the Event	240 hrs	1 day	Wed 5/6/20	Wed 5/6/20	
21	1.2.2.1.1	Workstream Strategy Alignment	240 hrs	1 day	Wed 5/6/20	Wed 5/6/20	Cemer, DHHR, IV&
22	1.2.3	Data Integration Event	480 hrs	2 days	Wed 5/6/20	Thu 5/7/20	
23	1.2.3.1	During the Event	480 hrs	2 days	Wed 5/6/20	Thu 5/7/20	
24	1.2.3.1.1	Complete Data Discovery	200 hrs	2 days	Wed 5/6/20	Thu 5/7/20	Cemer, DHHR, IV&
25	1.2.3.1.2	Determine Data Priority	40 hrs	2 days	Wed 5/6/20	Thu 5/7/20	Cemer, DHHR, IV&
26	1.2.3.1.3	Introduce Data Utility Tools	60 hrs	2 days	Wed 5/6/20	Thu 5/7/20	Cerner, DHHR, IV&
27	1.2.3.1.4	Align Data Specifications Approach	60 hrs	2 days	Wed 5/6/20	Thu 5/7/20	Cemer, DHHR, IV&
28	1.2.3.1.5	Align Solution/Strategy Goals	60 hrs	2 days	Wed 5/6/20	Thu 5/7/20	Cerner, DHHR, IV&
29	1.2.3.1.6	Review Data Ingestion Process	60 hrs	2 days	Wed 5/6/20	Thu 5/7/20	Cemer, DHHR, IV&
30	1.2.3.1.7	Outputs	0 hrs	0 days	Thu 5/7/20	Thu 5/7/20	
31			0 hrs	0 days	Thu 5/7/20	Thu 5/7/20	
32	1.2.3.1.7	2.2 Data Sets	0 hrs	0 days	Wed 5/6/20	Wed 5/6/20	)

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
33	1.2.4	Discovery, Requirements Validation and Analysis	3,000 hrs	15 davs	Mon 5/11/20	Tue 6/2/20	A to to to total
34	1.2.4.1	Prepare for and Conduct Requirements Validation Event	3,000 hrs				Cemer, DHHR, IV&
35	1.3	Deliverable Management	1,953 hrs		Wed 5/6/20		Comoi, Brint, 1959
36	1.3.1	Project Management Plan (comprised of the following)	1,880 hrs		Wed 5/6/20		
37	1.3.1.1	D002 Change Management Plan	90 hrs		Wed 5/6/20		
38	1.3.1.1.1	Deliverable Walkthrough	20 hrs	3 days			Cemer, DHHR, IV&
39	1.3.1.1.2	Cerner PMO Submit to DHHR for Review	50 hrs	1 day	Mon 5/11/20		
40	1.3.1.1.3	DHHR Review and Provide Comments	10 hrs	7 days	Wed 5/13/20		
41	1.3.1.1.4	Cemer Revisions (As Necessary)	5 hrs	5 days	Fri 5/22/20		
42	1.3.1.1.5	DHHR Review and Approval	5 hrs	2 days	Mon 6/1/20		
43	1.3.1.2	D003 Communication Plan	90 hrs	18 days			
44	1.3.1.2.1	Deliverable Walkthrough	20 hrs	3 days			Cemer, DHHR, IV&
45	1.3.1.2.2	Cerner PMO Submit to DHHR for Review	50 hrs	1 day	Mon 5/11/20		
46	1.3.1.2.3	DHHR Review and Provide Comments	10 hrs	7 days	Wed 5/13/20		
47	1.3.1.2.4	Cemer Revisions (As Necessary)	5 hrs	5 days	Fri 5/22/20		
48	1.3.1.2.5	DHHR Review and Approval	5 hrs	2 days	Mon 6/1/20		
49	1.3.1.3	D004 Cost Management Plan	145 hrs	18 days	Wed 5/6/20		
50	1.3.1.3.1	Deliverable Walkthrough	20 hrs	3 days			Cerner, DHHR, IV&
51	1.3.1.3.2	Cemer PMO Submit to DHHR for Review	100 hrs	1 day	Mon 5/11/20		
52	1.3.1.3.3	DHHR Review and Provide Comments	10 hrs	7 days	Wed 5/13/20		
53	1.3.1.3.4	Cerner Revisions (As Necessary)	10 hrs	5 days	Fri 5/22/20		
54	1.3.1.3.5	DHHR Review and Approval	5 hrs	2 days	Mon 6/1/20	Tue 6/2/20	DHHR. IV&V
55	1.3.1.4	D005 Human Resources Plan	145 hrs		Wed 5/6/20		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
56	1.3.1.4.1	Deliverable Walkthrough	20 hrs	3 days	Wed 5/6/20	Fri 5/8/20	Cerner, DHHR, IV&
57	1.3.1.4.2	Cemer PMO Submit to DHHR for Review	100 hrs	1 day	Mon 5/11/20 I		
58	1.3.1.4.3	DHHR Review and Provide Comments	10 hrs		Wed 5/13/20		
59	1.3.1.4.4	Cerner Revisions (As Necessary)	10 hrs	5 days	Fri 5/22/20		
60	1.3.1.4.5	DHHR Review and Approval	5 h <b>rs</b>	2 days	Mon 6/1/20		
61	1.3.1.5	D006 Modularity and Reusability Plan	145 hrs	18 days	Wed 5/6/20		
62	1.3.1.5.1	Deliverable Walkthrough	20 hrs	3 days			Cerner, DHHR, IV&
63	1.3.1.5.2	Cerner PMO Submit to DHHR for Review	100 hrs	1 day	Mon 5/11/20 M		
64	1.3.1.5.3	DHHR Review and Provide Comments	10 hrs		Wed 5/13/20		
65	1.3.1.5.4	Cerner Revisions (As Necessary)	10 hrs		Fri 5/22/20		

D	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
66	1.3.1.5.5	DHHR Review and Approval	5 hrs	2 days	Mon 6/1/20	Tue 6/2/20	DHHR, IV&V
67	1.3.1.6	D007 Project Work Plan	145 hrs	18 days	Wed 5/6/20	Tue 6/2/20	
68	1.3.1.6.1	Deliverable Walkthrough	20 hrs	3 days	Wed 5/6/20	Fri 5/8/20	Cemer, DHHR, IV&
69	1.3.1.6.2	Cemer PMO Submit to DHHR for Review	100 hrs	1 day	Mon 5/11/20	Mon 5/11/20	Cemer
70	1.3.1.6.3	DHHR Review and Provide Comments	10 hrs	7 days	Wed 5/13/20	Thu 5/21/20	DHHR, IV&V
71	1.3.1.6.4	Cemer Revisions (As Necessary)	10 hrs	5 days	Fri 5/22/20	Fri 5/29/20	Cemer
72	1.3.1.6.5	DHHR Review and Approval	5 hrs	2 days	Mon 6/1/20	Tue 6/2/20	DHHR, IV&V
73	1.3.1.7	D008 Quality Management Plan	125 hrs	18 days	Wed 5/6/20	Tue 6/2/20	
74	1.3.1.7.1	Deliverable Walkthrough	20 hrs	3 days	Wed 5/6/20	Fri 5/8/20	Cerner, DHHR, IV&
75	1.3.1.7.2	Cerner PMO Submit to DHHR for Review	80 hrs	1 day	Mon 5/11/20	Mon 5/11/20	Cerner
76	1.3.1.7.3	DHHR Review and Provide Comments	10 hrs	7 days	Wed 5/13/20	Thu 5/21/20	DHHR, IV&V
77	1.3.1.7.4	Cemer Revisions (As Necessary)	10 hrs	5 days	Fri 5/22/20	Fri 5/29/20	Cemer
78	1.3.1.7.5	DHHR Review and Approval	5 hrs	2 days	Mon 6/1/20	Tue 6/2/20	DHHR, IV&V
79	1.3.1.8	D009 Documentation Management Plan	90 hrs	18 days	Wed 5/6/20	Tue 6/2/20	
80	1.3.1.8.1	Deliverable Walkthrough	20 hrs	3 days	Wed 5/6/20	Fri 5/8/20	Cemer, DHHR, IV&
81	1.3.1.8.2	Cerner PMO Submit to DHHR for Review	50 hrs	1 day	Mon 5/11/20	Mon 5/11/20	Cemer
82	1.3.1.8.3	DHHR Review and Provide Comments	10 hrs	7 days	Wed 5/13/20	Thu 5/21/20	DHHR, IV&V
83	1.3.1.8.4	Cemer Revisions (As Necessary)	5 hrs	5 days	Fri 5/22/20	Fri 5/29/20	Cerner
84	1.3.1.8.5	DHHR Review and Approval	5 hrs	2 days	Mon 6/1/20	Tue 6/2/20	DHHR, IV&V
85	1.3.1.9	D010 Risk and Issue Management Plan	90 hrs	18 days	Wed 5/6/20	Tue 6/2/20	
86	1.3.1.9.1	Deliverable Walkthrough	20 hrs	3 days	Wed 5/6/20	Fri 5/8/20	Cerner, DHHR, IV&
87	1.3.1.9.2	Cemer PMO Submit to DHHR for Review	50 hrs	1 day	Mon 5/11/20	Mon 5/11/20	) Cemer
88	1.3.1.9.3	DHHR Review and Provide Comments	10 hrs	7 days	Wed 5/13/20	Thu 5/21/20	DHHR, IV&V
89	1.3.1.9.4	Cerner Revisions (As Necessary)	5 hrs	5 days	Fri 5/22/20	Fri 5/29/20	Cerner
90	1.3.1.9.5	DHHR Review and Approval	5 hrs	2 days	Mon 6/1/20	Tue 6/2/20	DHHR, IV&V
91	1.3.1.10	D011 Schedule Management Plan	145 hrs	18 days	Wed 5/6/20	Tue 6/2/20	
92	1.3.1.10.	1 Deliverable Walkthrough	20 hrs	3 days	Wed 5/6/20	Fri 5/8/20	Cerner, DHHR, IV&
93	1.3.1.10.	2 Cemer PMO Submit to DHHR for Review	100 hrs	1 day	Mon 5/11/20	) Mon 5/11/20	) Cemer
94	1.3.1.10.	3 DHHR Review and Provide Comments	10 hrs	7 days	Wed 5/13/20	Thu 5/21/20	DHHR, IV&V
95	1.3.1.10.	4 Cerner Revisions (As Necessary)	10 hrs	5 days	Fri 5/22/20	Fri 5/29/20	Cemer
96	1.3.1.10.	5 DHHR Review and Approval	5 hrs	2 days	Mon 6/1/20	Tue 6/2/20	DHHR, IV&V
97	1.3.1.11	D012 Scope Management Plan	145 hrs	18 days	Wed 5/6/20	Tue 6/2/20	
98	1.3.1.11.	1 Deliverable Walkthrough	20 hrs	3 days	Wed 5/6/20	Fri 5/8/20	Cemer, DHHR, IV&

iD	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
99	1.3.1.11.2	Cerner PMO Submit to DHHR for Review	100 hrs	1 day	Mon 5/11/20	Mon 5/11/20	) Cerner
100	1.3.1.11.3	DHHR Review and Provide Comments	10 hrs	7 days	Wed 5/13/20	Thu 5/21/20	DHHR, IV&V
101	1.3.1.11.4	Cerner Revisions (As Necessary)	10 hrs	5 days	Fri 5/22/20	Fri 5/29/20	Cemer
102	1.3.1.11.5	DHHR Review and Approval	5 hrs	2 days	Mon 6/1/20	Tue 6/2/20	DHHR, IV&V
103	1.3.1.12	D013 Stakeholder Management Plan and Stakeholder Analysis	145 hrs	18 days	Wed 5/6/20	Tue 6/2/20	
104	1.3.1.12.1	Deliverable Walkthrough	20 hrs	3 days	Wed 5/6/20	Fri 5/8/20	Cemer, DHHR, IV&
105	1.3.1.12.2	Cemer PMO Submit to DHHR for Review	100 hrs	1 day	Mon 5/11/20	Mon 5/11/20	Cemer
106	1.3.1.12.3	DHHR Review and Provide Comments	10 hrs	7 days	Wed 5/13/20	Thu 5/21/20	DHHR, IV&V
107	1.3.1.12.4	Cerner Revisions (As Necessary)	10 hrs	5 days	Fri 5/22/20	Fri 5/29/20	Cerner
108	1.3.1.12.5	DHHR Review and Approval	5 hrs	2 days	Mon 6/1/20	Tue 6/2/20	DHHR, IV&V
109	1.3.1.13	D014 Staffing Management Plan	90 hrs	18 days	Wed 5/6/20		
110	1.3.1.13.1	Deliverable Walkthrough	20 hrs	3 days	Wed 5/6/20	Fri 5/8/20	Cemer, DHHR, IV&
111	1.3.1.13.2	Cemer PMO Submit to DHHR for Review	50 hrs	1 day	Mon 5/11/20	Mon 5/11/20	Cemer
112	1.3.1.13.3	DHHR Review and Provide Comments	10 hrs	7 days	Wed 5/13/20	Thu 5/21/20	DHHR, IV&V
113	1.3.1.13.4	Cerner Revisions (As Necessary)	5 hrs	5 days	Fri 5/22/20	Fri 5/29/20	Cerner
114	1.3.1.13.5	DHHR Review and Approval	5 hrs	2 days	Mon 6/1/20	Tue 6/2/20	DHHR, IV&V
115	1.3.1.14	D015 Reconciliation Plan	145 hrs	18 days	Wed 5/6/20	Tue 6/2/20	
116	1.3.1.14.1	Deliverable Walkthrough	20 hrs	3 days	Wed 5/6/20	Fri 5/8/20	Cemer, DHHR, IV&
117	1.3.1.14.2	Cemer PMO Submit to DHHR for Review	100 hrs	1 day	Mon 5/11/20	Mon 5/11/20	Cemer
118	1.3.1.14.3	DHHR Review and Provide Comments	10 hrs	7 days	Wed 5/13/20	Thu 5/21/20	DHHR, IV&V
119	1.3.1.14.4	Cerner Revisions (As Necessary)	10 hrs	5 days	Fri 5/22/20	Fri 5/29/20	Cerner
120	1.3.1.14.5	DHHR Review and Approval	5 hrs	2 days	Mon 6/1/20	Tue 6/2/20	DHHR, IV&V
121	1.3.1.15	D016 Facility Management Plan	145 hrs	18 days	Wed 5/6/20	Tue 6/2/20	
122	1.3.1.15.1	Deliverable Walkthrough	20 hrs	3 days	Wed 5/6/20	Fri 5/8/20	Cemer, DHHR, IV&
123	1.3.1.15.2	Cemer PMO Submit to DHHR for Review	100 hrs	1 day	Mon 5/11/20	Mon 5/11/20	Cemer
124	1.3.1.15.3	DHHR Review and Provide Comments	10 hrs	7 days	Wed 5/13/20	Thu 5/21/20	DHHR, IV&V
125	1.3.1.15.4	Cerner Revisions (As Necessary)	10 hrs	5 days	Fri 5/22/20	Fri 5/29/20	Cemer
126	1.3.1.15.5	DHHR Review and Approval	5 hrs	2 days	Mon 6/1/20	Tue 6/2/20	DHHR, IV&V
127	1.3.2	Deliverable Dictionary	73 hrs	18 days	Wed 5/6/20	Tue 6/2/20	
128	1.3.2.1	Deliverable Walkthrough	20 hrs	3 days	Wed 5/6/20	Fri 5/8/20	Cemer, DHHR, IV&
129	1.3.2.2	Cerner PMO Submit to DHHR for Review	30 hrs	1 day	Mon 5/11/20	Mon 5/11/20	Cemer
130	1.3.2.3	DHHR Review and Provide Comments	10 hrs	7 days	Wed 5/13/20	Thu 5/21/20	DHHR, IV&V
131	1.3.2.4	Cerner Revisions (As Necessary)	8 hrs	5 days	Fri 5/22/20	Fri 5/29/20	Cerner

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
132	1.3.2.5	DHHR Review and Approval	5 hrs	2 days	Mon 6/1/20	Tue 6/2/20	DHHR, IV&V
133	1.4	Payment Milestone #1: Project Initiation Complete	0 hrs	0 days		Fri 5/29/20	
134	2	Design, Develop, Implementation (DDI)	104,637 hrs	359 days	Mon 6/1/20	Fri 11/5/21	
135	2.1	DDI Release 1			Mon 6/1/20		
136	2.1.1	Solution Planning 1 (Design Strategy)	1,082 hrs	22 days	Mon 6/1/20	Tue 6/30/20	
137	2.1.1.1	Events	292 hrs	4 days	Mon 6/1/20	Thu 6/4/20	
138	2.1.1.1.1	Current State Review	52 hrs	2 days	Mon 6/1/20	Tue 6/2/20	Cemer, DHHR, IV&
139	2.1.1.1.2	Design Strategy Workshops	240 hrs	2 days		Thu 6/4/20	
140	2.1.1.1.2.	Data Integration Workshop	120 hrs	1 day	Wed 6/3/20	Wed 6/3/20	Cemer, DHHR, IV&
141	2.1.1.1.2.2	Solution Configuration Workshop	60 hrs	1 day			Cemer, DHHR, IV&
142	2.1.1.1.2.3	Identity Management & User Access Security Workshop	60 hrs	1 day			Cemer, DHHR,
143	2.1.1.2	Deliverable Management	790 hrs	22 days	Mon 6/1/20	Tue 6/30/20	
144	2.1.1.2.1	D017 Data Management Plan	150 hrs	18 days	Fri 6/5/20	Tue 6/30/20	
145	2.1.1.2.1.1	Deliverable Walkthrough	20 hrs	3 days	Fri 6/5/20	Tue 6/9/20	Cemer, DHHR, IV&
146	2.1.1.2.1.2	Cemer PMO Submit to DHHR for Review	80 hrs	1 day	Wed 6/10/20		
147	2.1.1.2.1.3	DHHR Review and Provide Comments	25 hrs	7 days	Thu 6/11/20	Fri 6/19/20	DHHR, IV&V
148	2.1.1.2.1.4	Cemer Revisions (As Necessary)	15 hrs	5 days	Mon 6/22/20	Fri 6/26/20	Cemer
149	2.1.1.2.1.5	DHHR Review and Approval	10 hrs	2 days	Mon 6/29/20	Tue 6/30/20	DHHR, IV&V
150	2.1.1.2.2	D018 Incident Management Plan	120 hrs	18 days	Fri 6/5/20	Tue 6/30/20	
151	2.1.1.2.2.	Deliverable Walkthrough	20 hrs	3 days	Fri 6/5/20	Tue 6/9/20	Cemer, DHHR, IV&
152	2.1.1.2.2.2	Cemer PMO Submit to DHHR for Review	50 hrs	1 day	Wed 6/10/20	Wed 6/10/20	Cemer
153	2.1.1.2.2.	DHHR Review and Provide Comments	25 hrs	7 days	Thu 6/11/20	Fri 6/19/20	DHHR, IV&V
154	2.1.1.2.2.4	Cerner Revisions (As Necessary)	15 hrs	5 days	Mon 6/22/20	Fri 6/26/20	Cemer
155	2.1.1.2.2.	DHHR Review and Approval	10 hrs	2 days	Mon 6/29/20	Tue 6/30/20	DHHR, IV&V
156	2.1.1.2.3	D019 Testing Management Plan	170 hrs	18 days	Fri 6/5/20	Tue 6/30/20	
157	2.1.1.2.3.	Deliverable Walkthrough	20 hrs	3 days	Fri 6/5/20	Tue 6/9/20	Cemer, DHHR, IV&
158	2.1.1.2.3.2	Cemer PMO Submit to DHHR for Review	100 hrs	1 day	Wed 6/10/20	Wed 6/10/20	Cemer
159	2.1.1.2.3.	DHHR Review and Provide Comments	25 hrs	7 days	Thu 6/11/20	Fri 6/19/20	DHHR, IV&V
160	2.1.1.2.3.4	Cerner Revisions (As Necessary)	15 hrs	5 days	Mon 6/22/20	Fri 6/26/20	Cemer
161	2.1.1.2.3.	DHHR Review and Approval	10 hrs				DHHR, IV&V
162	2.1.1.2.4	D020 Privacy Impact Analysis	110 hrs	18 days	Fri 6/5/20	Tue 6/30/20	
163	2.1.1.2.4. <sup>-</sup>	Deliverable Walkthrough	20 hrs	3 days	Fri 6/5/20	Tue 6/9/20	Cerner, DHHR, IV&
164	2.1.1.2.4.2	Cemer PMO Submit to DHHR for Review	40 hrs	1 day	Wed 6/10/20		A-C-C-C

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
165	2.1.1.2.4.3	DHHR Review and Provide Comments	25 hrs	7 days	Thu 6/11/20	Fri 6/19/20	DHHR, IV&V
166	2.1.1.2.4.4	Cerner Revisions (As Necessary)	15 hrs	5 days	Mon 6/22/20	Fri 6/26/20	Cerner
167	2.1.1.2.4.	DHHR Review and Approval	10 hrs	2 days	Mon 6/29/20	Tue 6/30/20	DHHR, IV&V
168	2.1.1.2.5	D021 Requirements Gap Analysis Document	130 hrs	18 days	Fri 6/5/20	Tue 6/30/20	
169	2.1.1.2.5.1	Deliverable Walkthrough	20 hrs	3 days	Mon 6/1/20	Wed 6/3/20	Cemer, DHHR, IV&
170	2.1.1.2.5.2	Cemer PMO Submit to DHHR for Review	60 hrs	1 day	Thu 6/4/20	Thu 6/4/20	Cerner
171	2.1.1.2.5.3	DHHR Review and Provide Comments	25 hrs	7 days	Fri 6/5/20	Mon 6/15/20	DHHR, IV&V
172	2.1.1.2.5.4	Cerner Revisions (As Necessary)	15 hrs	5 days	Tue 6/16/20	Mon 6/22/20	Cemer
173	2.1.1.2.5.	DHHR Review and Approval	10 hrs	2 days	Tue 6/23/20	Wed 6/24/20	DHHR, IV&V
174	2.1.1.2.6	D022 Requirements Management Plan	110 hrs	18 days	Fri 6/5/20	Tue 6/30/20	
175	2.1.1.2.6.	Deliverable Walkthrough	20 hrs	3 days	Fri 6/5/20	Tue 6/9/20	Cemer, DHHR, IV&
176	2.1.1.2.6.2	Cemer PMO Submit to DHHR for Review	40 hrs	1 day	Wed 6/10/20	Wed 6/10/20	Cemer
177	2.1.1.2.6.3	DHHR Review and Provide Comments	25 hrs	7 days	Thu 6/11/20	Fri 6/19/20	DHHR, IV&V
178	2.1.1.2.6.4	Cemer Revisions (As Necessary)	15 hrs	5 days	Mon 6/22/20	Fri 6/26/20	Cerner
179	2.1.1.2.6.	DHHR Review and Approval	10 hrs	2 days	Mon 6/29/20	Tue 6/30/20	DHHR, IV&V
180	2.1.1.3	Payment Milestone #2: Solution Planning 1	0 hrs	0 days	Tue 6/30/20	Tue 6/30/20	
181	2.1.2	Solution Planning 2 (Design Confirmation)	1,210 hrs	22 days	Mon 6/8/20	Tue 7/7/20	
182	2.1.2.1	Finalize and Validate Design Workbooks	100 hrs	5 days	Mon 6/8/20	Fri 6/12/20	Cemer, DHHR
183	2.1.2.2	Deliverable Management	1,110 hrs	20 days	Wed 6/10/20	Tue 7/7/20	
184	2.1.2.2.1	D023 Requirements Specification Document (RSD)	130 hrs	18 days	Wed 6/10/20	Fri 7/3/20	
185	2.1.2.2.1.	Deliverable Walkthrough	20 hrs	3 days	Wed 6/10/20	Fri 6/12/20	Cemer, DHHR, IV&
186	2.1.2.2.1.2	Cemer PMO Submit to DHHR for Review	60 hrs	1 day	Mon 6/15/20	Mon 6/15/20	Cemer
187	2.1.2.2.1.	DHHR Review and Provide Comments	25 hrs	7 days	Tue 6/16/20	Wed 6/24/20	DHHR, IV&V
188	2.1.2.2.1.4	Cerner Revisions (As Necessary)	15 hrs	5 days	Thu 6/25/20	Wed 7/1/20	Cemer
189	2.1.2.2.1.	DHHR Review and Approval	10 hrs	2 days	Thu 7/2/20	Fri 7/3/20	DHHR, IV&V
190	2.1.2.2.2	D024 Requirements Traceability Matrix (RTM)	170 hrs	18 days	Wed 6/10/20	Fri 7/3/20	
191	2.1.2.2.2.	1 Deliverable Walkthrough	20 hrs	3 days	Wed 6/10/20	Fri 6/12/20	Cerner, DHHR, IV&
192	2.1.2.2.2.2	Cerner PMO Submit to DHHR for Review	100 hrs	1 day	Mon 6/15/20	Mon 6/15/20	Cerner
193	2.1.2.2.2.	DHHR Review and Provide Comments	25 hrs	7 days	Tue 6/16/20	Wed 6/24/20	DHHR, IV&V
194	2.1.2.2.2.4	Cerner Revisions (As Necessary)	15 hrs	5 days	Thu 6/25/20	Wed 7/1/20	Cerner
195	2.1.2.2.2.	DHHR Review and Approval	10 hrs	2 days	Thu 7/2/20	Fri 7/3/20	DHHR, IV&V
196	2.1.2.2.3	D025 Safeguard Procedures Report (SPR)	170 hrs	18 days	Wed 6/10/20	Fri 7/3/20	
197	2.1.2.2.3.	Deliverable Walkthrough	20 hrs	3 days	Wed 6/10/20	Fri 6/12/20	Cemer, DHHR, IV&

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
198	2.1.2.2.3.2	Cemer PMO Submit to DHHR for Review	100 hrs	1 day	Mon 6/15/20	Mon 6/15/20	Cemer
199	2.1.2.2.3.3	DHHR Review and Provide Comments	25 hrs	7 days	Tue 6/16/20	Wed 6/24/20	DHHR, IV&V
200	2.1.2.2.3.4	Cemer Revisions (As Necessary)	15 hrs	5 days	Thu 6/25/20	Wed 7/1/20	Cemer
201	2.1.2.2.3.	DHHR Review and Approval	10 hrs	2 days	Thu 7/2/20	Fri 7/3/20	DHHR, IV&V
202	2.1.2.2.4	D026 Security Plan	170 hrs	18 days	Fri 6/12/20	Tue 7/7/20	
203	2.1.2.2.4.	Deliverable Walkthrough	20 hrs	3 days	Fri 6/12/20	Tue 6/16/20	Cemer, DHHR, IV&
204	2.1.2.2.4.	Cemer PMO Submit to DHHR for Review	100 hrs	1 day	Wed 6/17/20	Wed 6/17/20	Cerner
205	_   2.1.2.2.4.3	DHHR Review and Provide Comments	25 hrs	7 days	Thu 6/18/20	Fri 6/26/20	DHHR, IV&V
206	2.1.2.2.4.	Cemer Revisions (As Necessary)	15 hrs	5 days	Mon 6/29/20	Fri 7/3/20	Cerner
207	2.1.2.2.4.		10 hrs	2 days	Mon 7/6/20	Tue 7/7/20	DHHR, IV&V
208	2.1.2.2.5	D027 Security, Privacy and Confidentiality Plan	170 hrs	18 days	Fri 6/12/20	Tue 7/7/20	
209	2.1.2.2.5.	Deliverable Walkthrough	20 hrs	3 days	Fri 6/12/20	Tue 6/16/20	Cemer, DHHR, IV&
210		and a second sec	100 hrs	1 day	Wed 6/17/20	Wed 6/17/20	Cemer
211	_   2.1.2.2.5.	DHHR Review and Provide Comments	25 hrs	7 days	Thu 6/18/20	Fri 6/26/20	DHHR, IV&V
	2.1.2.2.5.		15 hrs	5 days	Mon 6/29/20	Fri 7/3/20	Cemer
and a contract	2.1.2.2.5.		10 hrs	2 days	Mon 7/6/20	Tue 7/7/20	DHHR, IV&V
W W P	2.1.2.2.6	D028 System Backup and Record Retention Plan	170 hrs	18 days	Fri 6/12/20	Tue 7/7/20	
111-	2.1.2.2.6	Deliverable Walkthrough	20 hrs	3 days	Fri 6/12/20	Tue 6/16/20	Cemer, DHHR, IV&
	2.1.2.2.6		100 hrs	1 day	Wed 6/17/20	Wed 6/17/20	) Cerner
A A P SE I PE	2.1.2.2.6	i	25 hrs	7 days	Thu 6/18/20	Fri 6/26/20	DHHR, IV&V
218	44		15 hrs	5 days	Mon 6/29/20	Fri 7/3/20	Cemer
2.000 JEST 1 1.7 00	2.1.2.2.6		10 hrs	2 days	Mon 7/6/20	Tue 7/7/20	DHHR, IV&V
- 1 L	2.1.2.2.7	D029 System Requirement Document/Backlog User Stories	130 hrs	18 days	Fri 6/12/20	Tue 7/7/20	
221	2.1.2.2.7	1 Deliverable Walkthrough	20 hrs	3 days	Fri 6/12/20	Tue 6/16/20	Cemer, DHHR, IV
19. C. W. C. W.	2.1.2.2.7		60 hrs	1 day	Wed 6/17/20	Wed 6/17/20	0 Cemer
223			25 hrs	7 days	Thu 6/18/20	Fri 6/26/20	DHHR, IV&V
224		Cemer Revisions (As Necessary)	15 hrs	5 days	Mon 6/29/20	Fri 7/3/20	Cerner
225	-	.t DHHR Review and Approval	10 hrs	2 days	Mon 7/6/20	Tue 7/7/20	DHHR, IV&V
226		Payment Milestone #3: Solution Planning 2	0 hrs	0 days	Tue 7/7/20	Tue 7/7/20	182, 183
227		Solution Design, Testing and Operations 1 (Technical Configuration)	10,185 hrs	s 55 days	Mon 6/15/20	0 Fri 8/28/20	
228	2.1.3.1	Technical Configuration	8,730 hrs	55 days	Mon 6/15/2	0 Fri 8/28/20	
229	2.1.3.1.1	Data Onboarding (3 Sources)	2,220 hrs	55 days	Mon 6/15/2	0 Fri 8/28/20	

ĺD	WBS	Task Name		Work	Duration	Start	Finish	Task Owner
230	2.1.3.1.1	1	Direct to EDW (3 Sources)	810 hrs	37 days	Mon 6/15/20	Tu- 0/4/00	
231	2.1.3.1.1.	1	D2EDW Data Source #1: MMIS	270 hrs				
232	2.1.3.1.1.	1	Identify Data Source Steward	5 hrs		Mon 6/15/20		Bullio
233	2.1.3.1.1.	1	Complete Data Discovery Documents	15 hrs	1 day	Mon 6/15/20		
234	2.1.3.1.1.	1	Submit Data Dictionary	5 hrs	1 day	Tue 6/16/20		
235	2.1.3.1.1.	1	Determine Ongoing Load Timeline	5 hrs	1 day	Tue 6/16/20		
236	2.1.3.1.1.	1	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day			Cemer, DHHR Cemer, DHHR
227	04244				,,	1 40 0, 10,20	1 40 0/ 10/20	Center, Drink
	2.1.3.1.1.		Create & Submit Sample Files	20 hrs	2 days	Wed 6/17/20	Thu 6/18/20	DHHR
100 606	2.1.3.1.1.		Upload Vetted/Final Files	25 hrs	8 days	Fri 6/19/20	Tue 6/30/20	DHHR
	2.1.3.1.1.		Create Source Data Sets, Process and Validate	30 hrs	9 days	Wed 7/1/20	Mon 7/13/20	Cemer
	2.1.3.1.1.		*Internal Activation	5 hrs	1 day	Tue 7/14/20	Tue 7/14/20	Cemer
	2.1.3.1.1.		Complete Data Quality Report	25 hrs	7 days	Wed 7/15/20	Thu 7/23/20	Cemer
a	2.1.3.1.1.		Complete Historical Load (If Applicable)	30 hrs	10 days	Wed 7/15/20	Tue 7/28/20	Cemer, DHHR
	2.1.3.1.1.		Submit and Gain Approval of Interface Control Document	100 hrs			Tue 8/4/20	Cemer, DHHR, IV&V
	2.1.3.1.1.1.		D2EDW Data Source #2: PEIA	270 hrs	37 days	Mon 6/15/20		7700
	2.1.3.1.1.		Identify Data Source Steward	5 hrs	1 day	Mon 6/15/20		DHHR
	2.1.3.1.1.1		Complete Data Discovery Documents	15 hrs	1 day	Tue 6/16/20		
247	2.1.3.1.1.1		Submit Data Dictionary	5 hrs	1 day	Tue 6/16/20		
248	2.1.3.1.1.1		Determine Ongoing Load Timeline	5 hrs	1 day			Cemer, DHHR
249	2.1.3.1.1.1		Determine Historical Load Strategy (If Applicable)	5 hrs	1 day	Tue 6/16/20		
	2.1.3.1.1.1		Create & Submit Sample Files	20 hrs	2 days	Wed 6/17/20	Thu 6/18/20	DHHR
251	2.1.3.1.1.1		Upload Vetted/Final Files	25 hrs	8 days	Fri 6/19/20		
252	2.1.3.1.1.1		Create Source Data Sets, Process and Validate	30 hrs	9 days	Wed 7/1/20 I		
253	2.1.3.1.1.1		*Internal Activation	5 hrs	1 day	Tue 7/14/20		
254	2.1.3.1.1.1		Complete Data Quality Report	25 hrs		Wed 7/15/20		
255	2.1.3.1.1.1		Complete Historical Load (If Applicable)	30 hrs		Wed 7/15/20		
256	2.1.3.1.1.1		Submit and Gain Approval of Interface Control Document	100 hrs		Wed 7/15/20	Tue 8/4/20 (	Cemer, DHHR,
57	2.1.3.1.1.1.		D2EDW Data Source #3: HSC	270 hrs	37 days	Mon 6/15/20		V&V
258	2.1.3.1.1.1		Identify Data Source Steward	5 hrs		Mon 6/15/20 N		HHR
259	2.1.3.1.1.1		Complete Data Discovery Documents	15 hrs		Tue 6/16/20 1		
260	2.1.3.1.1.1		Submit Data Dictionary	5 hrs		Tue 6/16/20 T		

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
261	2.1.3.1.1.	Determine Ongoing Load Timeline	5 hrs	1 day	Tue 6/16/20	Tue 6/16/20	Cemer, DHHR
262	2.1.3.1.1.	Determine Historical Load Strategy (If	Applicable) 5 hrs	1 day	Tue 6/16/20	Tue 6/16/20	Cerner, DHHR
263	2.1.3.1.1.	Create & Submit Sample Files	20 hrs	2 days	Wed 6/17/20	Thu 6/18/20	DHHR
264	2.1.3.1.1.	Upload Vetted/Final Files	25 hrs	8 days	Fri 6/19/20	Tue 6/30/20	DHHR
AL 2011 19	2.1.3.1.1.		Validate 30 hrs	9 days	Wed 7/1/20	Mon 7/13/20	Cemer
266	2.1.3.1.1.	*Internal Activation	5 hrs	1 day	Tue 7/14/20	Tue 7/14/20	Cemer
267	2.1.3.1.1.	Complete Data Quality Report	25 hrs	7 days	Wed 7/15/20	Thu 7/23/20	Cemer
	2.1.3.1.1.	Complete Historical Load (If Applicabl	e) 30 hrs	10 days	Wed 7/15/20	Tue 7/28/20	Cemer, DHHR
269	2.1.3.1.1.	Submit and Gain Approval of Interface  Document	e Control 100 hrs	15 days	Wed 7/15/20		Cemer, DHHR, IV&V
270	2.1.3.1.1.		1,410 hrs	55 days	Mon 6/15/20	Fri 8/28/20	
******************	2.1.3.1.1.		470 hrs	55 days	Mon 6/15/20	Fri 8/28/20	
	2.1.3.1.1.		5 hrs	1 day	Mon 6/15/20	Mon 6/15/20	DHHR
	2.1.3.1.1.		15 hrs	1 day	Mon 6/15/20	Mon 6/15/20	DHHR
274			5 hrs	1 day	Mon 6/15/20	Mon 6/15/20	DHHR
	2.1.3.1.1		5 hrs	1 day	Mon 6/15/20	Mon 6/15/20	Cemer, DHHR
Ban Alderson	2.1.3.1.1		Applicable) 5 hrs	1 day	Mon 6/15/20	) Mon 6/15/20	Cerner, DHHR
277	2.1.3.1.1	Request & Set Up System IDs (Instruct by Cemer Integration Lead)	ions Provided 5 hrs	1 day	Mon 6/15/20	) Mon 6/15/20	DHHR
278	2.1.3.1.1	2 Create Source IDs	5 hrs	1 day	Mon 6/15/20	) Mon 6/15/20	) Cemer
279	2.1.3.1.1	2 Create & Submit Sample	20 hrs	1 day		Tue 6/16/20	
280	2.1.3.1.1	2 Develop & Upload Vetted File	25 hrs	_			Cerner, DHHR
281	2.1.3.1.1	2 Complete Data Integration Mappings	100 hrs	-	Mon 6/22/20		
282	2.1.3.1.1	2 Data Mapping Review	20 hrs	5 days	Tue 7/14/20	Mon 7/20/20	Cerner, DHHR
283	2.1.3.1.1	2 Complete PCST	75 hrs	9 days	Tue 7/21/20	Fri 7/31/20	Cemer
284	2.1.3.1.1	2 *Reference Record Ready	0 hrs	0 days	Fri 7/31/20	Fri 7/31/20	
285	2.1.3.1.1	.2 Complete EMPI/MPM & Programs	30 hrs	5 days	Mon 8/3/20	) Fri 8/7/20	Cemer
286	2.1.3.1.1	.2 *Internal Activation (Pop Record Rea	dy) 0 hrs	0 days	Fri 8/7/20	Fri 8/7/20	
MUNICIPAL INC.	2.1.3.1.1		25 hrs	5 days	Mon 8/10/2	0 Fri 8/14/20	Cerner
288	2.1.3.1.1	.2 Complete Historical Load (If Applicat	ole) 30 hrs	10 days	Mon 8/10/2	0 Fri 8/21/20	Cemer, DHHF
289	×.		Control 100 hr				Cemer, DHHF IV&V
290	2.1.3.1.1	.2 Pop Record Data Source #2: PEIA	470 hr		s Mon 6/15/2		
291			5 hrs	1 day	Mon 6/15/2	0 Mon 6/15/2	0 DHHR

ID	WBS	Task Name		Work	Duration	Start	Finish	Task Owner
292	2.1.3.1.1.2		Complete Data Discovery Documents	15 hrs	1 day	Mon 6/15/20	Mon 6/15/20	DHHR
293	2.1.3.1.1.2		Submit Data Dictionary	5 hrs	1 day	Mon 6/15/20		
294	2.1.3.1.1.2		Determine Ongoing Load Timeline	5 hrs	1 day			Cemer, DHHR
295	2.1.3.1.1.2		Determine Historical Load Strategy (If Applicable)	5 hrs	1 day			Cemer, DHHR
296	2.1.3.1.1.2		Request & Set Up System IDs (Instructions Provided by Cemer Integration Lead)	5 hrs	1 day	Mon 6/15/20	Mon 6/15/20	DHHR
297	2.1.3.1.1.2		Create Source IDs	5 hrs	1 day	Mon 6/15/20	Mon 6/15/20	Cemer
298	2.1.3.1.1.2		Create & Submit Sample	20 hrs	1 day	Tue 6/16/20		
299	2.1.3.1.1.2		Develop & Upload Vetted File	25 hrs				Cemer, DHHR
300	2.1.3.1.1.2		Complete Data Integration Mappings	100 hrs		Mon 6/22/20		
301	2.1.3.1.1.2		Data Mapping Review	20 hrs				Cemer, DHHR
302	2.1.3.1.1.2		Complete PCST	75 hrs		Tue 7/21/20		
303	2.1.3.1.1.2		*Reference Record Ready	0 hrs	0 days	Fri 7/31/20		Ocinici
304	2.1.3.1.1.2		Complete EMPI/MPM & Programs	30 hrs	5 days		Fri 8/7/20	Cemer
305	2.1.3.1.1.2		*Internal Activation (Pop Record Ready)	0 hrs	0 days	Fri 8/7/20	Fri 8/7/20	Ocilici
306	2.1.3.1.1.2		Complete Data Quality Report	25 hrs		Mon 8/10/20		Cernor
307	2.1.3.1.1.2		Complete Historical Load (If Applicable)	30 hrs				Cemer, DHHR
308	2.1.3.1.1.2		Submit & Gain Approval of Interface Control Document	100 hrs			Fri 8/28/20	Cerner, DHHR,
309	2.1.3.1.1.2		Pop Record Data Source #3: HSC	470 hrs	55 days	Mon 6/15/20		IV&V
310	2.1.3.1.1.2		Identify Data Source Steward	5 hrs		Mon 6/15/20		ЛННР
311	2.1.3.1.1.2		Complete Data Discovery Documents	15 hrs	1 day	Mon 6/15/20	,	
312	2.1.3.1.1.2		Submit Data Dictionary	5 hrs		Mon 6/15/20		
313	2.1.3.1.1.2		Determine Ongoing Load Timeline	5 hrs	1 day			Cemer, DHHR
314	2.1.3.1.1.2		Determine Historical Load Strategy (If Applicable)	5 hrs				Cemer, DHHR
315	2.1.3.1.1.2		Request & Set Up System IDs (Instructions Provided by Cerner Integration Lead)	5 hrs	1 day	Mon 6/15/20 I	Mon 6/15/20	DHHR
316	2.1.3.1.1.2		Create Source IDs	5 hrs	1 day	Mon 6/15/20 I	Mon 6/15/20	Comer
317	2.1.3.1.1.2		Create & Submit Sample	20 hrs		Tue 6/16/20		
318	2.1.3.1.1.2		Develop & Upload Vetted File	25 hrs				Cerner, DHHR
319	2.1.3.1.1.2		Complete Data Integration Mappings	100 hrs		Mon 6/22/20 M		
320	2.1.3.1.1.2		Data Mapping Review	20 hrs				Cemer Cemer, DHHR
321	2.1.3.1.1.2		Complete PCST	75 hrs		Tue 7/21/20		
322	2.1.3.1.1.2		*Reference Record Ready	0 hrs		Fri 7/31/20		Jemer .

D	WBS	Task Name	Work	Duration	Start	inish i	Task Ow ner
323	2.1.3.1.1.2	Complete EMPI/MPM & Programs	30 hrs	5 days	Mon 8/3/20	Fri 8/7/20 (	Cerner
324	 2.1.3.1.1.2	*Internal Activation (Pop Record Ready)	0 hrs	0 days	Fri 8/7/20	Fri 8/7/20	
325	2.1.3.1.1.2	Complete Data Quality Report	25 hrs	5 days	Mon 8/10/20	Fri 8/14/20	Cemer
326	2.1.3.1.1.2	Complete Historical Load (If Applicable)	30 hrs	10 days	Mon 8/10/20	Fri 8/21/20	Cemer, DHHR
327	2.1.3.1.1.2	Submit & Gain Approval of Interface Control Document	100 hrs	15 days	Mon 8/10/20		Cerner, DHHR, IV&V
328	2.1.3.1.2	Configure Solutions	5,510 hrs	39 days	Mon 6/15/20	Thu 8/6/20	
329	2.1.3.1.2.	HealtheEDW	3,170 hrs	39 days	Mon 6/15/20	Thu 8/6/20	
330	2.1.3.1.2.	Core Build	1,245 hrs	1 day	Mon 6/15/20	Mon 6/15/20	Cemer
331	2.1.3.1.2.	Analytics Reporting & Content Packages (3)	1,050 hrs	20 days	Mon 6/22/20	Fri 7/17/20	
332	2.1.3.1.2.	Quality Dashboard	150 hrs	20 days	Mon 6/22/20	Fri 7/17/20	
333	2.1.3.1.2.	Build Data Sets & Data Models	50 hrs	5 days	Mon 6/22/20	Fri 6/26/20	Cerner
334	2.1.3.1.2.	Configure Reports	50 hrs		Mon 6/29/20		
335	2.1.3.1.2.	Submit & Gain Approval of Report Specific	cations 50 hrs	10 days	Mon 7/6/20	Fri 7/17/20	Cemer, DHHR
336	2.1.3.1.2.	MCO Dashboard	450 hrs	20 days	Mon 6/22/20	Fri 7/17/20	
337	2.1.3.1.2.	Build Data Sets & Data Models	200 hrs	5 days	Mon 6/22/20	Fri 6/26/20	Cemer
338	2.1.3.1.2.	Configure Reports	150 hrs	5 days	Mon 6/29/20	Fri 7/3/20	Cerner
339	2.1.3.1.2.	1 Submit & Gain Approval of Report Specifi	cations 100 hrs	10 days	Mon 7/6/20	Fri 7/17/20	Cemer, DHHR
340	2.1.3.1.2.	1 Executive Dashboard	450 hrs	20 days	Mon 6/22/20	Fri 7/17/20	
341	2.1.3.1.2	Build Data Sets & Data Models	200 hrs	5 days	Mon 6/22/20	Fri 6/26/20	Cemer
342	2.1.3.1.2	1 Configure Reports	150 hrs	5 days	Mon 6/29/20	Fri 7/3/20	Cerner
343		1.50	cations 100 hrs	10 days	Mon 7/6/20	Fri 7/17/20	Cemer, DHHR
344	2.1.3.1.2	1 Ad-Hoc Data Models (5)	875 hrs	39 days	Mon 6/15/20	Thu 8/6/20	
345	2.1.3.1.2	1 Ad-Hoc Data Model #1: All Medicaid	175 hrs	39 days	Mon 6/15/20	Thu 8/6/20	
346			75 hrs	24 days	Mon 6/15/20	Thu 7/16/20	Cemer
	2.1.3.1.2	Submit and Gain Approval of Data Model Specifications	100 hrs	15 days	Fri 7/17/20	Thu 8/6/20	Cemer, DHHR
348	2.1.3.1.2	1 Ad-Hoc Data Model #2: Provider	175 hrs	39 days	Mon 6/15/20	Thu 8/6/20	
349	2.1.3.1.2	1 Configure Data Model	75 hrs	24 days	Mon 6/15/26	Thu 7/16/20	Cemer
TO 40 145	2.1.3.1.2		100 hrs				Cerner, DHHR
351	2.1.3.1.2	.1 Ad-Hoc Data Model #3: Claims	175 hrs	_	Mon 6/15/2		
352	2.1.3.1.2	1 Configure Data Model	75 hrs	24 days	Mon 6/15/2	Thu 7/16/20	Cemer

ID	)WBS	Task Name	Work	Duration	Start	Finish	Task Owner
353	2.1.3.1.2.1	Submit and Gain Approval of Data Model Specifications	100 hrs	15 days	Fri 7/17/20	Thu 8/6/20	Cerner, DHHR
354	2.1.3.1.2.1		175 hrs	39 days	Mon 6/15/20	Thu 9/6/20	
355	2.1.3.1.2.1		75 hrs		Mon 6/15/20		Comer
356	2.1.3.1.2.1	Submit and Gain Approval of Data Model Specifications	100 hrs				Cemer, DHHR
357	2.1.3.1.2.1	Ad-Hoc Data Model #5: Managed Care	175 hrs	39 davs	Mon 6/15/20	Thu 8/6/20	
358	2.1.3.1.2.1	Configure Data Model	75 hrs		Mon 6/15/20		Cemer
359	2.1.3.1.2.1	Submit and Gain Approval of Data Model Specifications	100 hrs				Cemer, DHHR
360	2.1.3.1.2.2	HealtheRegistries	1,500 hrs	30 days	Mon 6/15/20	Fri 7/24/20	
361	2.1.3.1.2.2	Core Build	1,500 hrs		Mon 6/15/20		Cemer
362	2.1.3.1.2.5	HealtheDataLab	840 hrs		Mon 6/15/20		
363	2.1.3.1.2.5	Core Build	840 hrs		Mon 6/15/20		Cerner
364	2.1.3.1.3	Set Up IdM and User Access Security	1,000 hrs		Mon 6/15/20		
365	1.2.1.3.1.5	Authentication	500 hrs	15 days	Mon 6/15/20	Fri 7/3/20	
366	1.2.1.3.1.3	Configure User Name & Password Credentials	500 hrs				Cemer, DHHR
367	1.2.1.3.1.3	Authorization	500 hrs		Mon 6/15/20		,
368	1.2.1.3.1.3	Configure Permissions	500 hrs	15 days	Mon 6/15/20	Fri 7/3/20	Cemer, DHHR
369	2.1.3.2	Deliverable Management	1,455 hrs		Wed 6/17/20		,
	2.1.3.2.1	D030 Business Process Models (BPMs)	170 hrs	18 days	Wed 7/15/20	Fri 8/7/20	
371	2.1.3.2.1.1	Deliverable Walkthrough	20 hrs				Cemer, DHHR, IV8
	2.1.3.2.1.2	Cemer PMO Submit to DHHR for Review	100 hrs		Mon 7/20/20 I		
373	2.1.3.2.1.3	DHHR Review and Provide Comments	25 hrs		Tue 7/21/20 \		
00 1994 without	2.1.3.2.1.4	Cemer Revisions (As Necessary)	15 hrs		Thu 7/30/20		
375	2.1.3.2.1.5	DHHR Review and Approval	10 hrs		Thu 8/6/20		
376	2.1.3.2.2	D031 Capacity Plan	170 hrs		Thu 7/16/20 M		
377	2.1.3.2.2.1	Deliverable Walkthrough	20 hrs				Cemer, DHHR, IV&
378	2.1.3.2.2.2	Cerner PMO Submit to DHHR for Review	100 hrs		Tue 7/21/20		
J. 10	2.1.3.2.2.3	DHHR Review and Provide Comments	25 hrs		Wed 7/22/20		
	2.1.3.2.2.4	Cemer Revisions (As Necessary)	15 hrs	5 days	Fri 7/31/20		
	2.1.3.2.2.5	DHHR Review and Approval	10 hrs	2 days	Fri 8/7/20 N		
	2.1.3.2.3	D032 Configuration Management Plan	150 hrs	18 days	Mon 7/20/20 V		• 5.5.
383	2.1.3.2.3.1	Deliverable Walkthrough	20 hrs				Cerner, DHHR, IV&
384	2.1.3.2.3.2	Cemer PMO Submit to DHHR for Review	80 hrs		Thu 7/23/20 1		

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
385	2.1.3.2.3.3	DHHR Review and Provide Comments	25 hrs	7 days	Fri 7/24/20	Mon 8/3/20	DHHR, IV&V
386	2.1.3.2.3.4	Cerner Revisions (As Necessary)	15 hrs	5 days	Tue 8/4/20	Mon 8/10/20	Cemer
387	2.1.3.2.3.5	DHHR Review and Approval	10 hrs	2 days	Tue 8/11/20	Wed 8/12/20	DHHR, IV&V
388	2.1.3.2.4	D033 Data Conversion Plan (DCP)	190 hrs	18 days	Tue 7/21/20	Thu 8/13/20	
389	2.1.3.2.4.1	Deliverable Walkthrough	20 hrs	3 days	Tue 7/21/20	Thu 7/23/20	Cemer, DHHR, IV&\
390	2.1.3.2.4.2	Cemer PMO Submit to DHHR for Review	120 hrs	1 day	Fri 7/24/20	Fri 7/24/20	Cerner !
391	2.1.3.2.4.3	DHHR Review and Provide Comments	25 hrs	7 days	Mon 7/27/20	Tue 8/4/20	DHHR, IV&V
392	2.1.3.2.4.4	Cemer Revisions (As Necessary)	15 hrs	5 days	Wed 8/5/20	Tue 8/11/20	Cemer
393	2.1.3.2.4.	DHHR Review and Approval	10 hrs	2 days	Wed 8/12/20	Thu 8/13/20	DHHR, IV&V
394	2.1.3.2.5	D034 Data Conversion Test Cases	190 hrs	18 days	Wed 6/17/20	Fri 7/10/20	
395	2.1.3.2.5.	Deliverable Walkthrough	20 hrs	3 days	Wed 6/17/20	Fri 6/19/20	Cerner, DHHR, IV&V
396	2.1.3.2.5.	Cemer PMO Submit to DHHR for Review	120 hrs	1 day	Mon 6/22/20	Mon 6/22/20	Cemer
397	2.1.3.2.5.	DHHR Review and Provide Comments	25 hrs	7 days	Tue 6/23/20	Wed 7/1/20	DHHR, IV&V
398	2.1.3.2.5.	Cemer Revisions (As Necessary)	15 hrs	5 days	Thu 7/2/20	Wed 7/8/20	Cemer
	2.1.3.2.5.		10 hrs	2 days	Thu 7/9/20	Fri 7/10/20	DHHR, IV&V
400	2.1.3.2.6	D035 Data Conversion Test Results	130 hrs	18 days	Fri 7/17/20	Tue 8/11/20	
THE WAY ! THE	2.1.3.2.6.	Deliverable Walkthrough	20 hrs	3 days	Fri 7/17/20	Tue 7/21/20	Cerner, DHHR, IV&
402	2.1.3.2.6.	Cemer PMO Submit to DHHR for Review	60 hrs	1 day	Wed 7/22/20	) Wed 7/22/20	) Cemer
403	2.1.3.2.6.	DHHR Review and Provide Comments	25 hrs	7 days	Thu 7/23/20	) Fri 7/31/20	DHHR, IV&V
404	2.1.3.2.6.	Cemer Revisions (As Necessary)	15 hrs	5 days	Mon 8/3/20	Fri 8/7/20	Cemer
	2.1.3.2.6.		10 hrs	2 days	Mon 8/10/2	0 Tue 8/11/20	DHHR, IV&V
406		D036 Database Design Document and Data Models	120 hrs	18 days	Wed 7/22/2	0 Fri 8/14/20	
407	2.1.3.2.7	1 Deliverable Walkthrough	20 hrs	3 days	Wed 7/22/2	0 Fri 7/24/20	Cemer, DHHR, IV&
408			50 hrs	1 day	Mon 7/27/2	0 Mon 7/27/2	0 Cerner
409	2.1.3.2.7	DHHR Review and Provide Comments	25 hrs	7 days	Tue 7/28/20	0 Wed 8/5/20	DHHR, IV&V
	2.1.3.2.7		15 h <b>rs</b>	5 days	Thu 8/6/20	Wed 8/12/2	0 Cemer
	2.1.3.2.7		10 hrs	2 days	Thu 8/13/2	0 Fri 8/14/20	DHHR, IV&V
412			130 hrs	18 days	Thu 7/23/2	0 Mon 8/17/2	0
413	~-		20 hrs	3 days	Thu 7/23/2	0 Mon 7/27/2	0 Cemer, DHHR, IV&
414	-		60 hrs	1 day	Tue 7/28/2	0 Tue 7/28/2	0 Cemer
	2.1.3.2.8		25 hrs	7 days	Wed 7/29/2	0 Thu 8/6/20	DHHR, IV&V
ALCOHOLD STREET	2.1.3.2.8		15 hrs	5 days	Fri 8/7/20	Thu 8/13/2	0 Cemer
	2.1.3.2.8		10 hrs	2 days	Fri 8/14/20	Mon 8/17/2	0 DHHR, IV&V

ID	WBS 	Task Name	Work	Duration	Start	Finish	Task Owner
418	2.1.3.2.9	D038 Disaster Recovery and Business Continuity Plan	110 hrs	18 days	Fri 7/24/20	Tue 8/18/20	1
419	2.1.3.2.9.1	Delinearly Wells					
420			20 hrs	3 days			Cemer, DHHR, IV8
**** *** * ***		Committee Division of LifeMem	40 hrs	1 day	Wed 7/29/20	Wed 7/29/20	Cemer
	2.1.3.2.9.5	The state of the s	25 hrs	7 days	Thu 7/30/20	Fri 8/7/20	DHHR, IV&V
=	2.1.3.2.9.4	Tomas its victoria (victoria de la victoria del victoria de la victoria de la victoria del victoria de la victoria dela victoria de la victoria de la victoria dela victo	15 hrs	5 days	Mon 8/10/20	Fri 8/14/20	Cemer
423	2.1.3.2.9.5	Approval	10 hrs	2 days	Mon 8/17/20	Tue 8/18/20	DHHR, IV&V
	2.1.3.2.10	Data Load Schedule	95 hrs	18 days	Wed 7/15/20	Fri 8/7/20	
Carlo Lance	2.1.3.2.10	Deliverable Walkthrough	20 hrs	3 days	Wed 7/15/20	Fri 7/17/20	Cemer, DHHR, IV8
	2.1.3.2.10	Cemer PMO Submit to DHHR for Review	25 hrs	1 day	Mon 7/20/20	Mon 7/20/20	Cemer
	2.1.3.2.10	DHHR Review and Provide Comments	25 hrs	7 days	Tue 7/21/20	Wed 7/29/20	DHHR, IV&V
428	2.1.3.2.10	Cemer Revisions (As Necessary)	15 hrs	5 days		Wed 8/5/20	
429	2.1.3.2.10	DHHR Review and Approval	10 hrs	2 days	Thu 8/6/20	Fri 8/7/20	
and the same	2.1.3.3	Payment Milestone #4: Solution Design, Testing and Operations 1 Complete	0 hrs	0 days	Fri 8/28/20	Fri 8/28/20	,
431	2.1.4	Solution Design, Testing and Operations 2 (Cemer Testing)	4,000 hrs	25 days	Mon 7/27/20	Fri 8/28/20	
432	2.1.4.1	Prepare for Testing	1,210 hrs			Mon 8/10/20	
433	2.1.4.1.1	Review Project Team Capacity, Assign Test Case and Attestation Writing	10 hrs	1 day	Mon 7/27/20	Mon 7/27/20	Cemer
434	2.1.4.1.2	Write Test Cases and Post Drafts for Review, Revision and Approval	1,000 hrs	7 days	Tue 7/28/20		Cerner, DHHR,
435	2.1.4.1.3	Finalize Test Cases in Testing Tools	200 hrs	3 days	Thu 8/6/20	Mon 8/10/20	
436	2.1.4.2	Cerner Testing	1,950 hrs	17 days	Thu 8/6/20		
437	2.1.4.2.1	Execute Test Cases to Completion and Resolve Defects	1,500 hrs			Fri 8/28/20	Cemer
438	2.1.4.2.2	Submit Testing Status Reports (Weekly)	450 hrs	17 days	Thu 8/6/20	Fri 8/28/20	Cemer
439	2.1.4.3	Deliverable Management	840 hrs		Mon 7/27/20		-
440	2.1.4.3.1	D039 Federal Certification and Review Management Plan	110 hrs		Mon 8/3/20		
441	2.1.4.3.1.1	Deliverable Walkthrough	20 hrs	3 days	Mon 8/3/20	Med 8/5/20	Cemer, DHHR, IV&
442	2.1.4.3.1.2	Cemer PMO Submit to DHHR for Review	40 hrs	1 day		Thu 8/6/20	
443	2.1.4.3.1.5	DHHR Review and Provide Comments	25 hrs	7 days		Mon 8/17/20 I	
444	2.1.4.3.1.4	Cemer Revisions (As Necessary)	15 hrs				
445	2.1.4.3.1.5	DHHR Review and Approval	10 hrs			Mon 8/24/20 (	
446	2.1.4.3.2	D040 Interface Inventory	130 hrs			Wed 8/26/20 I	UNIK, IV&V
	2.1.4.3.2.1	Deliverable Walkthrough			Tue 8/4/20		
		2011 Oldbio Hallattiongii	20 hrs	3 days	i ue 8/4/20	Thu 8/6/20 (	Cemer, DHHR, IV&V

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
448	2.1.4.3.2.2	Cerner PMO Submit to DHHR for Review	60 hrs	1 day	Fri 8/7/20	Fri 8/7/20	Cemer
449	2.1.4.3.2.3	DHHR Review and Provide Comments	25 hrs	7 days	Mon 8/10/20	Tue 8/18/20	DHHR, IV&V
450	2.1.4.3.2.4	Cemer Revisions (As Necessary)	15 hrs	5 days	Wed 8/19/20	Tue 8/25/20	Cemer
451	2.1.4.3.2.5	DHHR Review and Approval	10 hrs	2 days	Wed 8/26/20	Thu 8/27/20	DHHR, IV&V
452	2.1.4.3.3	D041 Load and Stress Test Cases	130 hrs	7 days	Thu 7/30/20	Fri 8/7/20	
453	2.1.4.3.3.1	Deliverable Walkthrough	20 hrs	2 days	Thu 7/30/20	Fri 7/31/20	Cemer, DHHR, IV&
454	2.1.4.3.3.2	Cemer PMO Submit to DHHR for Review	60 hrs	1 day	Mon 8/3/20	Mon 8/3/20	Cerner
455	2.1.4.3.3.3	DHHR Review and Provide Comments	25 hrs	2 days	Tue 8/4/20	Wed 8/5/20	DHHR, IV&V
456	2.1.4.3.3.4	Cerner Revisions (As Necessary)	15 hrs	1 day	Thu 8/6/20	Thu 8/6/20	Cemer
457	2.1.4.3.3.	DHHR Review and Approval	10 hrs	1 day	Fri 8/7/20	Fri 8/7/20	DHHR, IV&V
458	2.1.4.3.4	D042 Load and Stress Test Results	110 hrs	10 days	Wed 8/12/20	Tue 8/25/20	
459	2.1.4.3.4.	1 Deliverable Walkthrough	20 hrs	2 days	Wed 8/12/20	Thu 8/13/20	Cemer, DHHR, IV&\
460	2.1.4.3.4.	Cerner PMO Submit to DHHR for Review	40 hrs	1 day	Fri 8/14/20	Fri 8/14/20	Cerner
461	2.1.4.3.4.	DHHR Review and Provide Comments	25 hrs	3 days	Mon 8/17/20	Wed 8/19/20	DHHR, IV&V
462	2.1.4.3.4.	Cemer Revisions (As Necessary)	15 hrs	2 days	Thu 8/20/20	Fri 8/21/20	Cerner
463	2.1.4.3.4.	DHHR Review and Approval	10 hrs	2 days	Mon 8/24/20	Tue 8/25/20	DHHR, IV&V
464	2.1.4.3.5	D043 Operational Readiness Plan	110 hrs	18 days	Mon 7/27/20	Wed 8/19/20	)
465	2.1.4.3.5.	1 Deliverable Walkthrough	20 hrs	3 days	Mon 7/27/20	Wed 7/29/20	Cemer, DHHR, IV&
466	2.1.4.3.5.	2 Cemer PMO Submit to DHHR for Review	40 hrs	1 day	Thu 7/30/20	Thu 7/30/20	) Cerner
467	2.1.4.3.5.	DHHR Review and Provide Comments	25 hrs	7 days	Fri 7/31/20	Mon 8/10/20	DHHR, IV&V
468	2.1.4.3.5.	Cemer Revisions (As Necessary)	15 hrs	5 days	Tue 8/11/20	Mon 8/17/20	) Cerner
469	2.1.4.3.5.	E DHHR Review and Approval	10 hrs	2 days	Tue 8/18/20	Wed 8/19/20	DHHR, IV&V
470	2.1.4.3.6	D044 Operational Readiness Test Scripts	140 hrs	7 days	Thu 7/30/20	Fri 8/7/20	
471	2.1.4.3.6.	1 Deliverable Walkthrough	20 hrs	2 days	Thu 7/30/20	Fri 7/31/20	Cemer, DHHR, IV&
472	2.1.4.3.6.	2 Cemer PMO Submit to DHHR for Review	70 hrs	1 day	Mon 8/3/20	Mon 8/3/20	Cerner
473	2.1.4.3.6.	5 DHHR Review and Provide Comments	25 hrs	2 days	Tue 8/4/20	Wed 8/5/20	DHHR, IV&V
474	2.1.4.3.6	.∠ Cemer Revisions (As Necessary)	15 hrs	1 day	Thu 8/6/20	Thu 8/6/20	Cerner
475	2.1.4.3.6	.t DHHR Review and Approval	10 hrs	1 day	Fri 8/7/20	Fri 8/7/20	DHHR, IV&V
476	2.1.4.3.7	D045 Operational Readiness Test Results	110 hrs	14 days	Tue 8/11/2	Fri 8/28/20	
477	2.1.4.3.7	.1 Deliverable Walkthrough	20 hrs	2 days	Tue 8/11/2	0 Wed 8/12/2	0 Cemer, DHHR, IV&
478	2.1.4.3.7	.2 Cemer PMO Submit to DHHR for Review	40 hrs	1 day	Thu 8/13/2	0 Thu 8/13/2	0 Cemer
478	2.1.4.3.7	.5 DHHR Review and Provide Comments	25 hrs	7 days	Fri 8/14/20	Mon 8/24/2	0 DHHR, IV&V
480			15 hrs	3 days	Tue 8/25/2	0 Thu 8/27/2	0 Cemer

ID I	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
481	2.1.4.3.7.	DHHR Review and Approval	10 hrs	1 day	Fri 8/28/20	Fri 8/28/20	DHHR, IV&V
482	2.1.4.4	Payment Milestone #5: Solution Design, Testing and Operations 2 Complete	0 hrs	0 days		Fri 8/28/20	
483	2.1.5	Solution Design, Testing and Operations 3 (DHHR Testing/UAT)	4,315 hrs	24 days	Mon 8/31/20	Fri 10/2/20	
484	2.1.5.1	DHHR Testing	1,545 hrs	19 days	Mon 8/31/20	Fri 9/25/20	
485	2.1.5.1.1	User Acceptance Testing (UAT)	1,545 hrs				Cemer, DHHR
486	2.1.5.2	Complete Attestation Documents (Per Applicable Requirement)	1,500 hrs				Cerner, DHHR,
487	2.1.5.3	Deliverable Management	1,270 hrs	24 days	Mon 8/31/20	Fri 10/2/20	1747
488	2.1.5.3.1	D046 Regression Test Cases	110 hrs	9 days	Mon 8/31/20	Fri 9/11/20	
489	2.1.5.3.1.	Deliverable Walkthrough	20 hrs	2 days	Mon 8/31/20	Tue 9/1/20	Cemer, DHHR, IV&
490	2.1.5.3.1.2	Cemer PMO Submit to DHHR for Review	40 hrs	1 day		Wed 9/2/20	
491	2.1.5.3.1.3	DHHR Review and Provide Comments	25 hrs	3 days			DHHR, IV&V
492	2.1.5.3.1.4	Cerner Revisions (As Necessary)	15 hrs	2 days		Thu 9/10/20	
493	2.1.5.3.1.5	DHHR Review and Approval	10 hrs	1 day	Fri 9/11/20	Fri 9/11/20	DHHR, IV&V
494	2.1.5.3.2	D047 Regression Test Results	110 hrs	10 days	Mon 9/21/20		
495	2.1.5.3.2.1	Deliverable Walkthrough	20 hrs	3 days	Mon 9/21/20	Wed 9/23/20	Cerner, DHHR, IV&
A	2.1.5.3.2.2	Comment in a capital to blank to have	40 hrs	1 day	Thu 9/24/20		
	2.1.5.3.2.3	2. With the world in the comments	25 hrs	3 days	Fri 9/25/20	Tue 9/29/20	DHHR, IV&V
498	2.1.5.3.2.4	Cemer Revisions (As Necessary)	15 hrs	2 days	Wed 9/30/20	Thu 10/1/20	Cerner
499	2.1.5.3.2.5	DHHR Review and Approval	10 hrs	1 day	Fri 10/2/20	Fri 10/2/20	DHHR, IV&V
500	2.1.5.3.3	D048 Reports and Forms Inventory	150 hrs	18 days	Tue 9/1/20		
501	2.1.5.3.3.1	Deliverable Walkthrough	20 hrs	3 days	Tue 9/1/20	Thu 9/3/20	Cemer, DHHR, IV&
502	2.1.5.3.3.2	Cemer PMO Submit to DHHR for Review	80 hrs	1 day	Fri 9/4/20	Fri 9/4/20	
503	2.1.5.3.3.3	DHHR Review and Provide Comments	25 hrs	7 days	Tue 9/8/20	Wed 9/16/20	DHHR, IV&V
504	2.1.5.3.3.4	Cerner Revisions (As Necessary)	15 hrs	5 days	Thu 9/17/20		
505	2.1.5.3.3.5	DHHR Review and Approval	10 hrs	2 days	Thu 9/24/20	Fri 9/25/20	DHHR, IV&V
506	2.1.5.3.4	D049 System Integration Plan	190 hrs		Mon 8/31/20		
507	2.1.5.3.4.1	Deliverable Walkthrough	20 hrs	3 days	Mon 8/31/20	Wed 9/2/20	Cemer, DHHR, IV&
508	2.1.5.3.4.2	Cemer PMO Submit to DHHR for Review	120 hrs	1 day		Thu 9/3/20	
509	2.1.5.3.4.5	DHHR Review and Provide Comments	25 hrs	7 days			DHHR, IV&V
510	2.1.5.3.4.4	Cerner Revisions (As Necessary)	15 hrs	5 days	Wed 9/16/20		
511	2.1.5.3.4.£	DHHR Review and Approval	10 hrs		Wed 9/23/20		
512	2.1.5.3.5	D050 System Integration Test Cases	150 hrs		Mon 8/31/20		,

iD	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
513	<b>2.1.5.3.</b> 5.1	Deliverable Walkthrough	20 hrs	2 days	Mon 8/31/20	Tue 9/1/20	Cerner, DHHR, IV&
514	2.1.5.3.5.2	Cemer PMO Submit to DHHR for Review	80 hrs	1 day	Wed 9/2/20	Wed 9/2/20	Cemer
515	2.1.5.3.5.3	DHHR Review and Provide Comments	25 hrs	3 days	Thu 9/3/20	Tue 9/8/20	DHHR, IV&V
516	2.1.5.3.5.4	Cemer Revisions (As Necessary)	15 hrs	2 days	Wed 9/9/20	Thu 9/10/20	Cemer
517	2.1.5.3.5.5	DHHR Review and Approval	10 hrs	1 day	Fri 9/11/20	Fri 9/11/20	DHHR, IV&V
518	2.1.5.3.6	D051 System Integration Test Results	130 hrs	10 days	Mon 9/21/20	Fri 10/2/20	
519	2.1.5.3.6.1	Deliverable Walkthrough	20 hrs	3 days	Mon 9/21/20	Wed 9/23/20	Cemer, DHHR, IV&
520	2.1.5.3.6.2	Cerner PMO Submit to DHHR for Review	60 hrs	1 day	Thu 9/24/20	Thu 9/24/20	Cerner
521	2.1.5.3.6.3	DHHR Review and Provide Comments	25 hrs	3 days	Fri 9/25/20	Tue 9/29/20	DHHR, IV&V
522	2.1.5.3.6.4	Cemer Revisions (As Necessary)	15 hrs	2 days	Wed 9/30/20	Thu 10/1/20	Cemer
523	2.1.5.3.6.	DHHR Review and Approval	10 hrs	1 day	Fri 10/2/20	Fri 10/2/20	DHHR, IV&V
524	2.1.5.3.7	D052 Training Management Plan	110 hrs	17 days	Wed 9/2/20	Fri 9/25/20	
525	2.1.5.3.7.	Deliverable Walkthrough	20 hrs	3 days	Tue 9/1/20	Thu 9/3/20	Cerner, DHHR, IV&
526	2.1.5.3.7.	Cemer PMO Submit to DHHR for Review	40 hrs	1 day	Fri 9/4/20	Fri 9/4/20	Cerner
527	2.1.5.3.7.	DHHR Review and Provide Comments	25 hrs	7 days	Tue 9/8/20	Wed 9/16/20	DHHR, IV&V
528	2.1.5.3.7.	Cemer Revisions (As Necessary)	15 hrs	5 days	Thu 9/17/20	Wed 9/23/20	) Cerner
529	2.1.5.3.7.	DHHR Review and Approval	10 hrs	2 days	Thu 9/24/20	Fri 9/25/20	DHHR, IV&V
530	2.1.5.3.8	D053 User Acceptance Test Cases	190 hrs	9 days	Mon 8/31/20	Fri 9/11/20	
531	2.1.5.3.8.	Deliverable Walkthrough	20 hrs	2 days	Mon 8/31/20	Tue 9/1/20	Cemer, DHHR, IV&
532	2.1.5.3.8.	Cemer PMO Submit to DHHR for Review	120 hrs	1 day	Wed 9/2/20	Wed 9/2/20	Cemer
533	2.1.5.3.8.	DHHR Review and Provide Comments	25 hrs	3 days	Thu 9/3/20	Tue 9/8/20	DHHR, IV&V
534	2.1.5.3.8.	Cemer Revisions (As Necessary)	15 hrs	2 days	Wed 9/9/20	Thu 9/10/20	) Cemer
535	2.1.5.3.8.	DHHR Reviéw and Approval	10 hrs	1 day	Fri 9/11/20	Fri 9/11/20	DHHR, IV&V
536	2.1.5.3.9	D054 User Acceptance Test Results and Letter	130 hrs	10 days	Mon 9/21/20	Fri 10/2/20	
537	2.1.5.3.9	1 Deliverable Walkthrough	20 hrs	3 days	Mon 9/21/20	Wed 9/23/2	0 Cerner, DHHR, IV&
538	2.1.5.3.9	Cemer PMO Submit to DHHR for Review	60 hrs	1 day	Thu 9/24/20	Thu 9/24/20	O Cemer
539	2.1.5.3.9	DHHR Review and Provide Comments	25 hrs	3 days	Fri 9/25/20	Tue 9/29/20	DHHR, IV&V
540	2.1.5.3.9	Cerner Revisions (As Necessary)	15 hrs	2 days	Wed 9/30/20	Thu 10/1/20	0 Cemer
541	2.1.5.3.9	DHHR Review and Approval	10 hrs	1 day	Fri 10/2/20	Fri 10/2/20	DHHR, IV&V
542	2.1.5.4	Payment Milestone #6: Solution Design, Testing and Operations 3 Complete	0 hrs	0 days		Fri 10/2/20	
543	2.1.6	Solution Deployment 1 (Prepare for Cutover)	975 hrs		Mon 9/28/2		
544	2.1.6.1	Deliverable Management	975 hrs	10 days	Mon 9/28/2	0 Fri 10/9/20	_
545	2.1.6.1.1	D055 Cutover Play Book	270 hrs	9 days	Mon 9/28/2	0 Thu 10/8/2	0

ΙD	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
546	2.1.6.1.1.1	Deliverable Walkthrough	1 20 hrs	2 days	Mon 9/28/20	Tue 9/29/20	Cemer, DHHR, IV8
547	2.1.6.1.1.2	Cemer PMO Submit to DHHR for Review	200 hrs	1 day	Wed 9/30/20		
548	2.1.6.1.1.3	DHHR Review and Provide Comments	25 hrs	3 days	Thu 10/1/20		
549	2.1.6.1.1.4	Cemer Revisions (As Necessary)	15 hrs		Tue 10/6/20		
550	2.1.6.1.1.5	DHHR Review and Approval	10 hrs	1 day	Thu 10/8/20		
551	2.1.6.1.2	D056 Federal Review Supporting Documentation	270 hrs	9 days	Mon 9/28/20		
552	2.1.6.1.2.1	Deliverable Walkthrough	20 hrs				Cemer, DHHR, IV8
553	2.1.6.1.2.2	Cemer PMO Submit to DHHR for Review	200 hrs	1 day	Wed 9/30/20		
554	2.1.6.1.2.3	DHHR Review and Provide Comments	25 hrs	3 days	Thu 10/1/20		
555	2.1.6.1.2.4	Cemer Revisions (As Necessary)	15 hrs		Tue 10/6/20		
556	2.1.6.1.2.5	DHHR Review and Approval	10 hrs	1 day	Thu 10/8/20		
557	2.1.6.1.3	D057 Rollout Plan	120 hrs	9 days	Mon 9/28/20		
558	2.1.6.1.3.1	Deliverable Walkthrough	20 hrs				Cemer, DHHR, IV8
559	2.1.6.1.3.2	Cemer PMO Submit to DHHR for Review	50 hrs		Wed 9/30/20		
560	2.1.6.1.3.3	DHHR Review and Provide Comments	25 hrs		Thu 10/1/20		
561	2.1.6.1.3.4	Cemer Revisions (As Necessary)	15 hrs		Tue 10/6/20		
562	2.1.6.1.3.5	DHHR Review and Approval	10 hrs		Thu 10/8/20		
563	2.1.6.1.4	D058 Implementation Certification Letter	95 hrs		Wed 10/7/20		,
564	2.1.6.1.4.1	Deliverable Walkthrough	20 hrs				Cemer, DHHR, IV8
565	2.1.6.1.4.2	Cemer PMO Submit to DHHR for Review	50 hrs	1 day	Thu 10/8/20		
566	2.1.6.1.4.3	DHHR Review and Approval	25 hrs	1 day	Fri 10/9/20		
567	2.1.6.1.5	D059 Operations Change Management Plan	220 hrs	9 days	Mon 9/28/20		,
568	2.1.6.1.5.1	Deliverable Walkthrough	20 hrs				Cerner, DHHR, IV&
569	2.1.6.1.5.2	Cemer PMO Submit to DHHR for Review	150 hrs		Wed 9/30/20 \		
570	2.1.6.1.5.5	DHHR Review and Provide Comments	25 hrs	3 days	Thu 10/1/20 I	Mon 10/5/20	DHHR, IV&V
571	2.1.6.1.5.4	Cerner Revisions (As Necessary)	15 hrs		Tue 10/6/20 \		
572	2.1.6.1.5.5	DHHR Review and Approval	10 hrs		Thu 10/8/20		
573	2.1.6.2	Payment Milestone #7: Solution Deployment 1	0 hrs		Fri 10/9/20		,
574	2.1.7	Solution Deployment 2 (Cutover to Production)	2,740 hrs	14 days	Tue 10/13/20 I	Fri 10/30/20	
575	2.1.7.1	Complete Cutover to Production Tasks and Activities	2,000 hrs		Tue 10/13/20 i		Cemer
576	2.1.7.2	Deliverable Management	740 hrs		Mon 10/19/2( I		
577	2.1.7.2.1	D060 Operational Milestone Review	120 hrs		Mon 10/19/20 F		
578	2.1.7.2.1.1	Deliverable Walkthrough	20 hrs				Cemer, DHHR, IV&

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
579	2.1.7.2.1.2	Cerner PMO Submit to DHHR for Review	50 hrs	1 day	Tue 10/20/2	20Tue 10/20/20	Cemer
580	2.1.7.2.1.3	DHHR Review and Provide Comments	25 hrs	3 days	Ned 10/21/2	2C Fri 10/23/20	DHHR, IV&V
581	2.1.7.2.1.4	Cerner Revisions (As Necessary)	15 hrs	3 days	vion 10/26/2	2( <i>N</i> ed 10/28/20	Cemer
582	 2.1.7.2.1.5	DHHR Review and Approval	10 hrs	2 days	Thu 10/29/2	20 Fri 10/30/20	DHHR, IV&V
583	2.1.7.2.2	D061 Production Screenshots, Reports and Data for Certification	190 hrs	10 days	Mon 10/19/20	Fri 10/30/20	
584	2.1.7.2.2.	Deliverable Walkthrough	20 hrs	1 day	Vion 10/19/2	20/on 10/19/2	Cemer, DHHR, IV&\
585	2.1.7.2.2.2	Cemer PMO Submit to DHHR for Review	120 hrs	1 day	Tue 10/20/2	20Tue 10/20/20	Cemer
586	2.1.7.2.2.	DHHR Review and Provide Comments	25 hrs	3 days	Wed 10/21/	20 Fri 10/23/20	DHHR, IV&V
587	2.1.7.2.2.4	Cemer Revisions (As Necessary)	15 hrs	3 days	/lon 10/26/	20/Ved 10/28/2	Cemer
588	2.1.7.2.2.	DHHR Review and Approval	10 hrs	2 days	Thu 10/29/2	20 Fri 10/30/20	DHHR, IV&V
589	2.1.7.2.3	D062 Report Distribution Schedule	130 hrs	10 days	Vion 10/19/	20 Fri 10/30/20	
590	2.1.7.2.3.	Deliverable Walkthrough	20 hrs	1 day	vion 10/19/	2(vion 10/19/2	(Cemer, DHHR, IV&)
591	2.1.7.2.3.	Cemer PMO Submit to DHHR for Review	60 hrs	1 day	Tue 10/20/	20Tue 10/20/2	Cemer
592	2.1.7.2.3.	DHHR Review and Provide Comments	25 hrs	3 days	Ned 10/21/	2( Fri 10/23/20	DHHR, IV&V
593	2.1.7.2.3.	Cemer Revisions (As Necessary)	15 hrs	3 days	Vion 10/26/	2(Ned 10/28/2	(Cemer
594	2.1.7.2.3.	DHHR Review and Approval	10 hrs	2 days	Thu 10/29/	20 Fri 10/30/20	DHHR, IV&V
595	2.1.7.2.4	D063 Solution Health Monitoring Plan	170 hrs	10 days	vion 10/19/	/20 Fri 10/30/20	
596	2.1.7.2.4.	Deliverable Walkthrough	20 hrs	1 day	vion 10/19/	/2Cvlon 10/19/2	Cerner, DHHR, IV&
597	2.1.7.2.4.	Cemer PMO Submit to DHHR for Review	100 hrs	1 day	Tue 10/20/	20Tue 10/20/2	0 Cemer
598	2.1.7.2.4.	DHHR Review and Provide Comments	25 hrs	3 days	Ned 10/21	/20 Fri 10/23/20	DHHR, IV&V
599	2.1.7.2.4.	Cemer Revisions (As Necessary)	15 hrs	3 days	Vion 10/26	/2(Ned 10/28/2	Cemer .
600	2.1.7.2.4	DHHR Review and Approval	10 hrs	2 days	Thu 10/29/	/20 Fri 10/30/20	DHHR, IV&V
601	2.1.7.2.5	D064 System Operations Plan	130 hrs	10 days	Vion 10/19	/20 Fri 10/30/20	)
602	2.1.7.2.5	1 Deliverable Walkthrough	20 hrs	1 day	vion 10/19	/2(vion 10/19/2	CCemer, DHHR, IV&
603	2.1.7.2.5	Cemer PMO Submit to DHHR for Review	60 hrs	1 day	Tue 10/20	/20 Fue 10/20/2	0Cerner
604	2.1.7.2.5	DHHR Review and Provide Comments	25 hrs	3 days	Ned 10/21	/20 Fri 10/23/20	DHHR, IV&V
605	2.1.7.2.5	Cemer Revisions (As Necessary)	15 hrs	3 days	vion 10/26	/20/Ved 10/28/2	CCemer 2002
606	2.1.7.2.5	EDHHR Review and Approval	10 hrs	2 days	Thu 10/29	/20 Fri 10/30/2	DHHR, IV&V
607	2.1.7.3	Payment Milestone #8: Solution Deployment 2	0 hrs	0 days	Fri 10/30/	20 Fri 10/30/2	0
608	2.1.8	Solution Deployment 3 (Training)	730 hrs	18 days	Tue 10/13	/20. Fri 11/6/20	
609	2.1.8.1	Training	265 hrs	3 days	Mon 11/2	/20 Thu 11/5/2	0
610	40.	Conduct Train the Trainer Event(s) & Maintenance Tra	aining 265 hrs	3 days	Mon 11/2	/20 Thu 11/5/2	0 Cemer, DHHR, IV&V

İD	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
611	2.1.8.2	Deliverable Management	465 hrs	18 daye	Fue 10/12/20	F- 14/0/00	
612	2.1.8.2.1	D065 System and User Documentation	190 hrs		Tue 10/13/20		
613	2.1.8.2.1.1		20 hrs		Tue 10/13/20		
614	2.1.8.2.1.2		120 hrs				Cemer, DHHR, IV8
615	2.1.8.2.1.8		25 hrs		Thu 10/15/20		
616	2.1.8.2.1.4		15 hrs		Fri 10/16/20 Tue 10/27/20		
617	2.1.8.2.1.5		10 hrs		Fri 10/30/20		
618	2.1.8.2.2	D066 Training Materials	190 hrs		Tue 10/13/20		
619	2.1.8.2.2.1	Deliverable Walkthrough	20 hrs				Cerner, DHHR, IV&
620	2.1.8.2.2.2	Cemer PMO Submit to DHHR for Review	120 hrs		Thu 10/15/20		
621	2.1.8.2.2.3	DHHR Review and Provide Comments	25 hrs		Fri 10/16/20		
622	2.1.8.2.2.4	Cemer Revisions (As Necessary)	15 hrs		Tue 10/27/20		
623	2.1.8.2.2.5	DHHR Review and Approval	10 hrs		Fri 10/30/20		
624	2.1.8.2.3	D067 Training Report	50 hrs		Thu 11/5/20		DHIR, IV&V
625	2.1.8.2.3.1	Deliverable Walkthrough	15 hrs	1 day			Cerner, DHHR, IV&
626	2.1.8.2.3.2	Cemer PMO Submit to DHHR for Review	25 hrs	1 day	Thu 11/5/20		
627	2.1.8.2.3.3	DHHR Review and Approval	10 hrs	1 day	Fri 11/6/20		
628	2.1.8.2.4	D068 Training Schedule	35 hrs		vion 10/19/20		DHIR, IVAV
629	2.1.8.2.4.1	Deliverable Walkthrough	10 hrs				Cemer, DHHR, IV&
630	2.1.8.2.4.2	Cemer PMO Submit to DHHR for Review	20 hrs		Tue 10/20/201		
631	2.1.8.2.4.5	DHHR Review and Approval	5 hrs		Ned 10/21/20/		
632	2.1.8.3	Payment Milestone #9: Solution Deployment 3	0 hrs		Fri 11/6/20		DANK, IV&V
633	2.2	DDI Release 2			Mon 11/9/20		
634	2.2.1	Solution Planning 1 (Design Strategy)	890 hrs		Mon 11/9/20 M		
635	2.2.1.1	Events	720 hrs		Mon 11/9/20 I		
636	2.2.1.1.1	Current State Review	120 hrs				Cemer, DHHR, IV&
637	2.2.1.1.2	Design Strategy Workshops	600 hrs		Ned 11/11/2(T		Demei, Drink, Iva
638	2.2.1.1.2.1	Data Integration Workshop	200 hrs				Cemer, DHHR, IV&
639	2.2.1.1.2.2	Solution Configuration Workshop	200 hrs				Cemer, DHHR, IV&
640	2.2.1.1.2.	Identity Management & User Access Security Workshop	200 hrs	1 day	Thu 11/12/20		Cemer, DHHR,
	2.2.1.2	Deliverable Management	170 hrs	18 days	Mon 11/9/20 N		T 50 T
and one	2.2.1.2.1	D019 Testing Management Plan	170 hrs		Mon 11/9/20 N		
643	2.2.1.2.1.1	Deliverable Walkthrough	20 hrs				Cemer, DHHR, IV&

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
644	2.2.1.2.1.2	Cemer PMO Submit to DHHR for Review	100 hrs	1 day	Fri 11/13/20	Fri 11/13/20	Cemer
645	2.2.1.2.1.8	DHHR Review and Provide Comments	25 hrs	7 days	Vion 11/16/20	Tue 11/24/20	DHHR, IV&V
646	2.2.1.2.1.4	Cemer Revisions (As Necessary)	15 hrs	5 days	Ned 11/25/20	Thu 12/3/20	Cemer
647	2.2.1.2.1.8	DHHR Review and Approval	10 hrs	2 days	Fri 12/4/20	Mon 12/7/20	DHHR, IV&V
648	2.2.1.3	Payment Milestone #10: Solution Planning 1	0 hrs	0 days	Mon 12/7/20	Mon 12/7/20	
649	2.2.2	Solution Planning 2 (Design Confirmation)	370 hrs	20 days	vion 11/16/2	(Γue 12/15/20	
650	2.2.2.1	Finalize and Validate Design Workbooks	250 hrs	5 days	vion 11/16/2	(Fri 11/20/20	Cerner, DHHR
651	2.2.2.2	Deliverable Management	120 hrs	18 days	Ned 11/18/2	(Γue 12/15/20	
652	2.2.2.2.1	D024 Requirements Traceability Matrix (RTM)	120 hrs	18 days	Ned 11/18/2	(Tue 12/15/20	
653	2.2.2.2.1.1	Deliverable Walkthrough	20 hrs	3 days	Ned 11/18/2	C Fri 11/20/20	Cerner, DHHR, IV8
654	2.2.2.2.1.2	Cemer PMO Submit to DHHR for Review	50 hrs	1 day	vion 11/23/2	(vion 11/23/20	Cemer
655	2.2.2.2.1.3	DHHR Review and Provide Comments	25 hrs	7 days	Tue 11/24/2	0 Fri 12/4/20	DHHR, IV&V
656	2.2.2.2.1.4	Cemer Revisions (As Necessary)	15 hrs	5 days	Mon 12/7/20	Fri 12/11/20	Cemer
657	2.2.2.2.1.	DHHR Review and Approval	10 hrs	2 days	vion 12/14/2	(Tue 12/15/20	DHHR, IV&V
658	2.2.2.3	Payment Milestone #11: Solution Planning 2	0 hrs	0 days	Tue 12/15/2	0 Tue 12/15/20	
659	2.2.3	Solution Design, Testing and Operations 1 (Technical Configuration)	11,830 hrs	55 days	Mon 11/30/20	Fri 2/19/21	
660	2.2.3.1	Technical Configuration	11,350 hrs	55 days	vion 11/30/2	C Fri 2/19/21	
661	2.2.3.1.1	Ingest and Onboard Data	6,400 hrs	55 days	vion 11/30/2	C Fri 2/19/21	
662	2.2.3.1.1.	1 Direct to EDW (15 Sources)	4,050 hrs	37 days	Vion 11/30/2	(Mon 1/25/21	
663	2.2.3.1.1.	1 D2EDW Data Source #1: TBD	270 hrs	33 days	Vion 11/30/2	(Tue 1/19/21	
664	2.2.3.1.1.	1 Identify Data Source Steward	5 hrs	1 day	vion 11/30/2	2€√lon 11/30/2	(DHHR
665	2.2.3.1.1.	1 Complete Data Discovery Documents	15 hrs	1 day	Tue 12/1/2	0 Tue 12/1/20	DHHR
666	2.2.3.1.1.	1 Submit Data Dictionary	5 hrs	1 day	Tue 12/1/2	0 Tue 12/1/20	DHHR
667	2.2.3.1.1.	1 Determine Ongoing Load Timeline	5 hrs	1 day	Tue 12/1/2	0 Tue 12/1/20	Cerner, DHHR
668	2.2.3.1.1.	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day	Tue 12/1/2	0 Tue 12/1/20	Cemer, DHHR
669	2.2.3.1.1.	1 Create & Submit Sample Files	20 hrs	2 days	Wed 12/2/2	0 Thu 12/3/20	DHHR
670	2.2.3.1.1.	1 Upload Vetted/Final Files	25 hrs	8 days	Fri 12/4/20	Γue 12/15/2	0 DHHR
671	2.2.3.1.1.	.1 Create Source Data Sets, Process and Validate	30 hrs	9 days	Ned 12/16/2	20/Ved 12/30/2	(Cerner
672	2.2.3.1.1	.1 *Internal Activation	5 hrs	1 day	Thu 12/31/2	20Thu 12/31/2	0 Cemer
673	2.2.3.1.1	.1 Complete Data Quality Report	25 hrs	7 days	Mon 1/4/2	1 Tue 1/12/2	1 Cemer
674	2.2.3.1.1	.1 Complete Historical Load (If Applicable)	30 hrs	10 days	Mon 1/4/2	1 Fri 1/15/21	Cemer, DHHR
675	2.2.3.1.1	.1 Submit and Gain Approval of Interface Control Document	100 hrs	15 days	s Mon 1/4/2	1 Mon 1/25/2	1 Cemer, DHHR, IV&V

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
676	2.2.3.1.1.1.	D2EDW Data Source #2: TBD	270 hrs	33 days	Mon 11/30/20	Tue 1/19/21	L
677	2.2.3.1.1.1	Identify Data Source Steward	5 hrs	1 day	vion 11/30/20		מחחט.
678	2.2.3.1.1.1	Complete Data Discovery Documents	15 hrs	1 day	Tue 12/1/20		
679	2.2.3.1.1.1	Submit Data Dictionary	5 hrs	1 day	Tue 12/1/20		
680	2.2.3.1.1.1	Determine Ongoing Load Timeline	5 hrs	1 day			Cerner, DHHR
681	2.2.3.1.1.1	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day			Cemer, DHHR
682	2.2.3.1.1.1	Create & Submit Sample Files	20 hrs	2 days	Wed 12/2/20	Thu 12/2/20	DULID
683	2.2.3.1.1.1	Upload Vetted/Final Files	25 hrs	8 days		Tue 12/15/20	
684	2.2.3.1.1.1	Create Source Data Sets, Process and Validate	30 hrs		Ned 12/16/20		
685	2.2.3.1.1.1	*Internal Activation	5 hrs	1 days	Thu 12/31/20		
686	2.2.3.1.1.1	Complete Data Quality Report	25 hrs	7 days	Mon 1/4/21	,	
687	2.2.3.1.1.1	Complete Historical Load (If Applicable)	30 hrs				Cemer, DHHR
688	2.2.3.1.1.1	Submit and Gain Approval of Interface Control Document	100 hrs			Mon 1/25/21	Cerner, DHHR,
689	2.2.3.1.1.1.	D2EDW Data Source #3: TBD	270 hrs	33 davs	Mon 11/30/20		IV&V
390	2.2.3.1.1.1	Identify Data Source Steward	5 hrs	1 day	vion 11/30/20		DHHR
391	2.2.3.1.1.1	Complete Data Discovery Documents	15 hrs	1 day	Tue 12/1/20		
392	2.2.3.1.1.1	Submit Data Dictionary	5 hrs	1 day	Tue 12/1/20		
393	2.2.3.1.1.1	Determine Ongoing Load Timeline	5 hrs	1 day			Cemer, DHHR
694	2.2.3.1.1.1	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day	Tue 12/1/20		
95	2.2.3.1.1.1	Create & Submit Sample Files	20 hrs	2 days	Wed 12/2/20	Thu 12/3/20	DHHD
96	2.2.3.1.1.1	Upload Vetted/Final Files	25 hrs		Fri 12/4/20 [		
97	2.2.3.1.1.1	Create Source Data Sets, Process and Validate	30 hrs		Ned 12/16/2(/		
98	2.2.3.1.1.1	*Internal Activation	5 hrs		Thu 12/31/201		
399	2.2.3.1.1.1	Complete Data Quality Report	25 hrs		Mon 1/4/21		
700	2.2.3.1.1.1	Complete Historical Load (If Applicable)	30 hrs		Mon 1/4/21		
701	2.2.3.1.1.1	Submit and Gain Approval of Interface Control Document	100 hrs		Mon 1/4/21 M	Mon 1/25/21 (	Cerner, DHHR,
702	2.2.3.1.1.1.	D2EDW Data Source #4: TBD	270 hrs	33 davs	Mon 11/30/20		V&V
703	2.2.3.1.1.1	Identify Data Source Steward	5 hrs		vlon 11/30/20√		HHR
04	2.2.3.1.1.1	Complete Data Discovery Documents	15 hrs		Tue 12/1/20 7		
705	2.2.3.1.1.1	Submit Data Dictionary	5 hrs		Tue 12/1/20 1		
706	2.2.3.1.1.1	Determine Ongoing Load Timeline	5 hrs		Tue 12/1/20 T		

)	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
707	2.2.3.1.1.1	Determine Historical Load Strategy (If Applicable	e) 5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	Cemer, DHHR
708	2.2.3.1.1.1	Create & Submit Sample Files	20 hrs	2 days	Wed 12/2/20	Thu 12/3/20	DHHR
709	2.2.3.1.1.1	Upload Vetted/Final Files	25 hrs	8 days	Fri 12/4/20	Tue 12/15/20	DHHR
710	2.2.3.1.1.1	Create Source Data Sets, Process and Validate	30 hrs	9 days	Ned 12/16/20	Ned 12/30/20	Cerner
711	2.2.3.1.1.1	*Internal Activation	5 hrs	1 day	Thu 12/31/20	Thu 12/31/20	Cemer
712	2.2.3.1.1.1	Complete Data Quality Report	25 hrs	7 days	Mon 1/4/21	Tue 1/12/21	Cemer
713	2.2.3.1.1.1	Complete Historical Load (If Applicable)	30 hrs	10 days	Mon 1/4/21	Fri 1/15/21	Cerner, DHHR
714	2.2.3.1.1.	Submit and Gain Approval of Interface Control Document	100 hrs	15 days	Mon 1/4/21	Mon 1/25/21	Cemer, DHHR, IV&V
715	2.2.3.1.1.1.	D2EDW Data Source #5: TBD	270 hrs	33 days	Mon 11/30/20	Tue 1/19/21	
716	2.2.3.1.1.	Identify Data Source Steward	5 hrs	1 day	Vion 11/30/2	(vion 11/30/20	DHHR
717	2.2.3.1.1.	Complete Data Discovery Documents	15 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
718	2.2.3.1.1.	Submit Data Dictionary	5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
719	2.2.3.1.1.	Determine Ongoing Load Timeline	5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	Cemer, DHHR
720	2.2.3.1.1.	Determine Historical Load Strategy (If Applicab	le) 5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	Cemer, DHHR
721	2.2.3.1.1.	Create & Submit Sample Files	20 hrs	2 days	Wed 12/2/20	Thu 12/3/20	DHHR
722	2.2.3.1.1.	Upload Vetted/Final Files	25 hrs	8 days	Fri 12/4/20	Tue 12/15/20	DHHR
723	2.2.3.1.1.	Create Source Data Sets, Process and Validate	30 hrs	9 days	Ned 12/16/2	(/Ved 12/30/2	(Cemer
724	2.2.3.1.1.	*Internal Activation	5 hrs	1 day	Thu 12/31/2	0/hu 12/31/2	Cemer
725	2.2.3.1.1.	Complete Data Quality Report	25 hrs	7 days	Mon 1/4/21	Tue 1/12/21	Cerner
726	2.2.3.1.1.	Complete Historical Load (If Applicable)	30 hrs	10 days	Mon 1/4/21	Fri 1/15/21	Cemer, DHHR
727	2.2.3.1.1.	Submit and Gain Approval of Interface Control Document	100 hrs	15 days	Mon 1/4/21	Mon 1/25/21	Cerner, DHHR, IV&V
728	2.2.3.1.1.1	D2EDW Data Source #6: TBD	270 hrs	33 days	Mon 11/30/2	Tue 1/19/21	
729	2.2.3.1.1.	1 Identify Data Source Steward	5 hrs	1 day	Vion 11/30/2	(vion 11/30/2	CDHHR
730	2.2.3.1.1.	1 Complete Data Discovery Documents	15 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
731	2.2.3.1.1.	1 Submit Data Dictionary	5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
732	2.2.3.1.1	1 Determine Ongoing Load Timeline	5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	Cemer, DHHR
73 <b>3</b>	2.2.3.1.1	Determine Historical Load Strategy (If Applical	ole) 5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	Cerner, DHHR
734	2.2.3.1.1	1 Create & Submit Sample Files	20 hrs	2 days	Wed 12/2/2	0 Thu 12/3/20	DHHR
735	2.2.3.1.1	1 Upload Vetted/Final Files	25 hrs	8 days	Fri 12/4/20	Tue 12/15/2	ODHHR
736	2.2.3.1.1	1 Create Source Data Sets, Process and Validate	e 30 hrs	9 days	Ned 12/16/2	2(Ned 12/30/2	CCemer .
737	2.2.3.1.1	*Internal Activation	5 hrs	1 day	Thu 12/31/2	20Thu 12/31/2	0Cemer

ID	WBS 	Task Name	Work	Duration	Start	Finish	Task Owner
738	2.2.3.1.1.1	Complete Data Quality Report	25 hrs	7 days	Mon 1/4/21	Tue 1/12/21	Cerner
739	2.2.3.1.1.1	Complete Historical Load (If Applicable)	30 hrs	10 days			Cemer, DHHR
740	2.2.3.1.1.1	Submit and Gain Approval of Interface Control Document	100 hrs				Cemer, DHHR,
741	2.2.3.1.1.1.	D2EDW Data Source #7: TBD	270 hrs	33 days	Mon 11/30/20	Tue 1/19/21	1707
742	2.2.3.1.1.1	Identify Data Source Steward	5 hrs	1 day	Vion 11/30/20		DHHR
743	2.2.3.1.1.1	Complete Data Discovery Documents	15 hrs	1 day		Tue 12/1/20	
744	2.2.3.1.1.1	Submit Data Dictionary	5 hrs	1 day		Tue 12/1/20	
745	2.2.3.1.1.1	Determine Ongoing Load Timeline	5 hrs	1 day			Cemer, DHHR
746	2.2.3.1.1.1	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day			Cemer, DHHR
747	2.2.3.1.1.1	Create & Submit Sample Files	20 hrs	2 days	Wed 12/2/20	Thu 12/3/20	DHHR
748	2.2.3.1.1.1	Upload Vetted/Final Files	25 hrs	8 days		Tue 12/15/20	
749	2.2.3.1.1.1	Create Source Data Sets, Process and Validate	30 hrs		/Ved 12/16/20	Ned 12/30/20	Cemer
750	2.2.3.1.1.1	*Internal Activation	5 hrs		Thu 12/31/20		
751	2.2.3.1.1.1	Complete Data Quality Report	25 hrs		Mon 1/4/21		
752	2.2.3.1.1.1	Complete Historical Load (If Applicable)	30 hrs				Cemer, DHHR
753	2.2.3.1.1.1	Submit and Gain Approval of Interface Control Document	100 hrs				Cemer, DHHR,
754	2.2.3.1.1.1.	D2EDW Data Source #8: TBD	270 hrs	33 days	Mon 11/30/20	Tue 1/19/21	1141
755	2.2.3.1.1.1	Identify Data Source Steward	5 hrs	1 day	vion 11/30/20		DHHR
756	2.2.3.1.1.1	Complete Data Discovery Documents	15 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
757	2.2.3.1.1.1	Submit Data Dictionary	5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
758	2.2.3.1.1.1	Determine Ongoing Load Timeline	5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	Cemer, DHHR
759	2.2.3.1.1.1	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day			Cemer, DHHR
760	2.2.3.1.1.1	Create & Submit Sample Files	20 hrs	2 days	Wed 12/2/20	Thu 12/3/20	DHHR
761	2.2.3.1.1.1	Upload Vetted/Final Files	25 hrs	8 days		Tue 12/15/20	
762	2.2.3.1.1.1	Create Source Data Sets, Process and Validate	30 hrs		Ned 12/16/20		
763	2.2.3.1.1.1	*Internal Activation	5 hrs		Γhu 12/31/20		
764	2.2.3.1.1.1	Complete Data Quality Report	25 hrs		Mon 1/4/21		
765	2.2.3.1.1.1	Complete Historical Load (if Applicable)	30 hrs				Cemer, DHHR
766	2.2.3.1.1.1	Submit and Gain Approval of Interface Control Document	100 hrs			Mon 1/25/21	Cerner, DHHR.
	2.2.3.1.1.1.	D2EDW Data Source #9: TBD	270 hrs	33 days	Mon 11/30/20		
768	2.2.3.1.1.1	Identify Data Source Steward	5 hrs		vion 11/30/20		DHHR

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
769	2.2.3.1.1.1	Complete Data Discovery Documents	15 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
770	2.2.3.1.1.1	Submit Data Dictionary	5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
771	2.2.3.1.1.	Determine Ongoing Load Timeline	5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	Cerner, DHHR
772	2.2.3.1.1.	Determine Historical Load Strategy (If Applicable	e) 5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	Cemer, DHHR
773	_i  2.2.3.1.1.	Create & Submit Sample Files	20 hrs	2 days	Wed 12/2/20	Thu 12/3/20	DHHR
774	2.2.3.1.1.	Upload Vetted/Final Files	25 hrs	8 days	Fri 12/4/20	Tue 12/15/20	DHHR
775	2.2.3.1.1.	Create Source Data Sets, Process and Validate	30 hrs	9 days	Ned 12/16/20	(Ned 12/30/20	Cerner
776	2.2.3.1.1.	*Internal Activation	5 hrs	1 day	Thu 12/31/20	Thu 12/31/20	Cemer
777	2.2.3.1.1.	Complete Data Quality Report	25 hrs	7 days	Mon 1/4/21	Tue 1/12/21	Cerner
778	2.2.3.1.1.	Complete Historical Load (If Applicable)	30 hrs	10 days	Mon 1/4/21	Fri 1/15/21	Cemer, DHHR
779	2.2.3.1.1.	Submit and Gain Approval of Interface Control Document	100 hrs	15 days	Mon 1/4/21	Mon 1/25/21	Cerner, DHHR, IV&V
780	2.2.3.1.1.1	D2EDW Data Source #10: TBD	270 hrs	33 days	Mon 11/30/20	Tue 1/19/21	
781	2.2.3.1.1.	Identify Data Source Steward	5 hrs	1 day	Vion 11/30/2	(√lon 11/30/2	CDHHR
782	2.2.3.1.1.	Complete Data Discovery Documents	15 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
783	2.2.3.1.1.	Submit Data Dictionary	5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
784	2.2.3.1.1.	Determine Ongoing Load Timeline	5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	Cemer, DHHR
785	2.2.3.1.1.	Determine Historical Load Strategy (If Applicab	le) 5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	Cerner, DHHR
786	2.2.3.1.1.	Create & Submit Sample Files	20 hrs	2 days	Wed 12/2/20	0 Thu 12/3/20	DHHR
787	2.2.3.1.1	1 Upload Vetted/Final Files	25 hrs	8 days	Fri 12/4/20	Γue 12/15/2	ODHHR
788	2.2.3.1.1.	1 Create Source Data Sets, Process and Validate	30 hrs	9 days	Ned 12/16/2	C/Ved 12/30/2	(Cerner
789	2.2.3.1.1	1 *Internal Activation	5 hrs	1 day	Thu 12/31/2	OThu 12/31/2	0 Cemer
790	2.2.3.1.1	1 Complete Data Quality Report	25 hrs	7 days	Mon 1/4/21	Tue 1/12/21	l Cemer
791	2.2.3.1.1	1 Complete Historical Load (If Applicable)	30 hrs	10 days	Mon 1/4/21	Fri 1/15/21	Cemer, DHHR
792	2.2.3.1.1	1 Submit and Gain Approval of Interface Control Document	100 hrs	15 days	Mon 1/4/21	I Mon 1/25/2	1 Cerner, DHHR 1V&V
793	2.2.3.1.1	1 D2EDW Data Source #11: TBD	270 hrs	33 days	Von 11/30/2	20 Tue 1/19/2	1
794	2.2.3.1.1	1 Identify Data Source Steward	5 hrs	1 day	vion 11/30/2	2(vlon 11/30/2	CDHHR
795	2.2.3.1.1	.1 Complete Data Discovery Documents	15 hrs	1 day	Tue 12/1/2	0 Tue 12/1/2	DHHR
796	2.2.3.1.1	Submit Data Dictionary	5 hrs	1 day	Tue 12/1/2	0 Tue 12/1/2	DHHR
797	2.2.3.1.1	1 Determine Ongoing Load Timeline	5 hrs	1 day	Tue 12/1/2	0 Tue 12/1/2	D Cerner, DHHR
798	2.2.3.1.1	Determine Historical Load Strategy (If Applica	ble) 5 hrs	1 day	Tue 12/1/2	0 Tue 12/1/2	0 Cemer, DHHR
700	 2.2.3.1.1	Create & Submit Sample Files	20 hrs	2 days	Wed 12/2/2	0 Thu 12/3/2	0 DHHR

ID	WBS	Task Name		Work	Duration	Start	Finish	Task Owner
800	2.2.3.1.1.1	Uploa	ad Vetted/Final Files	25 hrs	8 days	Fri 12/4/20	Tue 12/15/20	DHHR
801	2.2.3.1.1.1	Creat	e Source Data Sets, Process and Validate	30 hrs	9 days	Ned 12/16/2		
802	2.2.3.1.1.1	*Inter	nal Activation	5 hrs		Thu 12/31/20		
803	2.2.3.1.1.1	Comp	olete Data Quality Report	25 hrs		Mon 1/4/21		
804	2.2.3.1.1.1	Comp	plete Historical Load (If Applicable)	30 hrs				Cemer, DHHR
805	2.2.3.1.1.1	Subm Docui	nit and Gain Approval of Interface Control ment	100 hrs				Cemer, DHHR,
806	2.2.3.1.1.1.	D2EDW D	ata Source #12: TBD	270 hrs	33 days	Mon 11/30/20	Tue 1/19/21	
807	2.2.3.1.1.1	ldenti	fy Data Source Steward	5 hrs	1 day	vion 11/30/20	Mon 11/30/20	DHHR
808	2.2.3.1.1.1	Comp	lete Data Discovery Documents	15 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
809	2.2.3.1.1.1	Subm	it Data Dictionary	5 hrs	1 day	Tue 12/1/20		
810	2.2.3.1.1.1	Deter	mine Ongoing Load Timeline	5 hrs	1 day			Cerner, DHHR
811	2.2.3.1.1.1	Deten	mine Historical Load Strategy (If Applicable)	5 hrs	1 day			Cemer, DHHR
812	2.2.3.1.1.1	Create	e & Submit Sample Files	20 hrs	2 days	Wed 12/2/20	Thu 12/3/20	DHHR
813	2.2.3.1.1.1	Uploa	d Vetted/Final Files	25 hrs	8 days		Tue 12/15/20	
814	2.2.3.1.1.1	Create	Source Data Sets, Process and Validate	30 hrs	9 days	Ned 12/16/20		
815	2.2.3.1.1.1	*Inter	nal Activation	5 hrs		Thu 12/31/20		
816	2.2.3.1.1,1	Comp	lete Data Quality Report	25 hrs		Mon 1/4/21		
817	2.2.3.1.1.1	Comp	lete Historical Load (If Applicable)	30 hrs				Cerner, DHHR
818	2.2.3.1.1.1	Subm Docur	it and Gain Approval of Interface Control nent	100 hrs			Mon 1/25/21	Cemer, DHHR,
819	2.2.3.1.1.1.	D2EDW Da	ita Source #13: TBD	270 hrs	33 days	Mon 11/30/20		1747
820	2.2.3.1.1.1	Identi	y Data Source Steward	5 hrs		vion 11/30/20		DHHR
821	2.2.3.1.1.1	Comp	lete Data Discovery Documents	15 hrs		Tue 12/1/20		
822	2.2.3.1.1.1	Subm	it Data Dictionary	5 hrs		Tue 12/1/20		
823	2.2.3.1.1.1	Deter	nine Ongoing Load Timeline	5 hrs				Cemer, DHHR
824	2.2.3.1.1.1	Determ	nine Historical Load Strategy (If Applicable)	5 hrs		***		Cerner, DHHR
825	2.2.3.1.1.1	Create	& Submit Sample Files	20 hrs	2 days	Wed 12/2/20	Thu 12/3/20	DHHR
826	2.2.3.1.1.1	Uploa	d Vetted/Final Files	25 hrs		Fri 12/4/20		
827	2.2.3.1.1.1	Create	Source Data Sets, Process and Validate	30 hrs		Ned 12/16/20		
828	2.2.3.1.1.1		al Activation	5 hrs		Thu 12/31/201		
829	2.2.3.1.1.1	Compl	ete Data Quality Report	25 hrs	7 days	Mon 1/4/21		
830	2.2.3.1.1.1	Compl	ete Historical Load (If Applicable)	30 hrs				Cemer, DHHR

5	WBS	Task Name		Work	Duration	Start	Finish	Task Ow ner
831	2.2.3.1.1.1	- A.152 V	Submit and Gain Approval of Interface Control Document	100 hrs	15 days	Mon 1/4/21		Cemer, DHHR, IV&V
832	2.2.3.1.1.1.		D2EDW Data Source #14: TBD	270 hrs	33 days	Mon 11/30/20	Tue 1/19/21	
833	2.2.3.1.1.1		Identify Data Source Steward	5 hrs	1 day	vion 11/30/20	Vion 11/30/20	DHHR
834	2.2.3.1.1.1		Complete Data Discovery Documents	15 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
835	2.2.3.1.1.1		Submit Data Dictionary	5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
836	2.2.3.1.1.	1	Determine Ongoing Load Timeline	5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	Cemer, DHHR
837	2.2.3.1.1.	1	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	Cemer, DHHR
838	2.2.3.1.1.	1	Create & Submit Sample Files	20 hrs	2 days	Wed 12/2/20	Thu 12/3/20	DHHR
839	2.2.3.1.1.	1	Upload Vetted/Final Files	25 hrs	8 days	Fri 12/4/20	Tue 12/15/20	DHHR
840	2.2.3.1.1.	1	Create Source Data Sets, Process and Validate	30 hrs	9 days	Ned 12/16/2	(Ned 12/30/20	Cemer
841	2.2.3.1.1.	1	*Internal Activation	5 hrs	1 day	Thu 12/31/20	Thu 12/31/20	Cemer
842	2.2.3.1.1.	1	Complete Data Quality Report	25 hrs	7 days	Mon 1/4/21	Tue 1/12/21	Cerner
843	2.2.3.1.1.	1	Complete Historical Load (If Applicable)	30 hrs	10 days	Mon 1/4/21	Fri 1/15/21	Cemer, DHHR
844	2.2.3.1.1.	1	Submit and Gain Approval of Interface Control Document	100 hrs	15 days	Mon 1/4/21	Mon 1/25/21	Cemer, DHHR IV&V
845	2.2.3.1.1.1		D2EDW Data Source #15: TBD	270 hrs	33 days	Mon 11/30/20	Tue 1/19/21	
846	2.2.3.1.1.	1	Identify Data Source Steward	5 hrs	1 day	Mon 11/30/2	(vlon 11/30/20	DHHR
847	2.2.3.1.1.	1	Complete Data Discovery Documents	15 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
848	2.2.3.1.1.	10	Submit Data Dictionary	5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
849	2.2.3.1.1.	4	Determine Ongoing Load Timeline	5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	Cemer, DHHR
850	2.2.3.1.1.	1	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day	Tue 12/1/20	Tue 12/1/20	Cerner, DHHR
851	2.2.3.1.1.	1	Create & Submit Sample Files	20 hrs	2 days	Wed 12/2/2	Thu 12/3/20	DHHR
	2.2.3.1.1.		Upload Vetted/Final Files	25 hrs	8 days	Fri 12/4/20	Tue 12/15/20	DHHR
853	2.2.3.1.1.	.1	Create Source Data Sets, Process and Validate	30 hrs	9 days	Ned 12/16/2	(Ned 12/30/2	(Cemer
854	2.2.3.1.1	.1	*Internal Activation	5 hrs	1 day	Thu 12/31/2	0Thu 12/31/20	Cemer
855			Complete Data Quality Report	25 hrs	7 days	Mon 1/4/21	Tue 1/12/21	Cemer
856			Complete Historical Load (If Applicable)	30 hrs	10 days	Mon 1/4/21	Fri 1/15/21	Cemer, DHHR
857	_		Submit and Gain Approval of Interface Control Document	100 hrs	15 days	Mon 1/4/21	Mon 1/25/21	Cerner, DHHR
858	2.2.3.1.1	.2	Mapped to Population Record (5 Sources)	2,350 hrs	55 days	√lon 11/30/2	C Fri 2/19/21	
859			Pop Record Data Source #1: TBD	470 hrs	55 days	Mon 11/30/2	C Fri 2/19/21	
860			Identify Data Source Steward	5 hrs	1 day	vion 11/30/2	20/lon 11/30/2	CDHHR
861			Complete Data Discovery Documents	15 hrs	1 day	vion 11/30/2	2(vlon 11/30/2	CDHHR

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
862	2.2.3.1.1.2	Submit Data Dictionary	5 hrs	1 day	vion 11/30/20	↓ √lon 11/30/2	l (DHHR
863	2.2.3.1.1.2	Determine Ongoing Load Timeline	5 hrs	1 day			(Cemer, DHHR
	2.2.3.1.1.2	Determine Historical Load Strategy (If Applicable)		1 day	Mon 11/30/20	Mon 11/30/20	Cerner, DHHR
865	2.2.3.1.1.2	Request & Set Up System IDs (Instructions Provide by Cerner Integration Lead)	d 5 hrs	1 day	Mon 11/30/20	Mon 11/30/20	DHHR
866	2.2.3.1.1.2	Create Source IDs	5 hrs	1 day	Vion 11/30/20		Cemer
867	2.2.3.1.1.2	Create & Submit Sample	20 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
868	2.2.3.1.1.2	Develop & Upload Vetted File	25 hrs	3 days	Wed 12/2/20	Fri 12/4/20	Cerner, DHHR
869	2.2.3.1.1.2	Complete Data Integration Mappings	100 hrs		Mon 12/7/20		
870	2.2.3.1.1.2	Data Mapping Review	20 hrs				Cemer, DHHR
871	2.2.3.1.1.2	Complete PCST	75 hrs	9 days		Thu 1/21/21	
872	2.2.3.1.1.2	*Reference Record Ready	0 hrs		Thu 1/21/21		
873	2.2.3.1.1.2	Complete EMPI/MPM & Programs	30 hrs	5 days		Thu 1/28/21	
874	2.2.3.1.1.2	*Internal Activation (Pop Record Ready)	0 hrs	0 days	Thu 1/28/21		
875	2.2.3.1.1.2	Complete Data Quality Report	25 hrs	5 days	Fri 1/29/21		
876	2.2.3.1.1.2	Complete Historical Load (If Applicable)	30 hrs				Cemer, DHHR
877	2.2.3.1.1.2	Submit & Gain Approval of Interface Control Document	100 hrs				Cemer, DHHR, IV&V
878	2.2.3.1.1.2	Pop Record Data Source #2: TBD	470 hrs	55 days	vion 11/30/20	Fri 2/19/21	IVav
	2.2.3.1.1.2	Identify Data Source Steward	5 hrs		Von 11/30/20		DHHR
880	2.2.3.1.1.2	Complete Data Discovery Documents	15 hrs	1 day	vion 11/30/20		
881	2.2.3.1.1.2	Submit Data Dictionary	5 hrs	1 day	vion 11/30/20		
882	2.2.3.1.1.2	Determine Ongoing Load Timeline	5 hrs	1 day			Cemer, DHHR
883	2.2.3.1.1.2	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day	Mon 11/30/20		Cemer, DHHR
100000.00.	2.2.3.1.1.2	Request & Set Up System IDs (Instructions Provided by Cemer Integration Lead)	l 5 hrs	1 day	Mon 11/30/2:0		DHHR
885	2.2.3.1.1.2	Create Source IDs	5 hrs	1 day	Vion 11/30/20		Cemer
386	2.2.3.1.1.2	Create & Submit Sample	20 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
887	2.2.3.1.1.2	Develop & Upload Vetted File	25 hrs	3 days	Wed 12/2/20	Fri 12/4/20	Cemer, DHHR
388	2.2.3.1.1.2	Complete Data Integration Mappings	100 hrs		Mon 12/7/20/		
889	2.2.3.1.1.2	Data Mapping Review	20 hrs				Cemer, DHHR
390	2.2.3.1.1.2	Complete PCST	75 hrs	9 days		Thu 1/21/21	
891	2.2.3.1.1.2	*Reference Record Ready	0 hrs		Thu 1/21/21		
892	2.2.3.1.1.2	Complete EMPI/MPM & Programs	30 hrs		Fri 1/22/21		Comer

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
893	2.2.3.1.1.2	*Internal Activation (Pop Record Ready)	0 hrs	0 days	Thu 1/28/21	Thu 1/28/21	
894	2.2.3.1.1.2	Complete Data Quality Report	25 hrs	5 days	Fri 1/29/21	Thu 2/4/21	Cerner
895	2.2.3.1.1.2	Complete Historical Load (If Applicable)	30 hrs	10 days	Fri 1/29/21	Thu 2/11/21	Cemer, DHHR
896	2.2.3.1.1.2	Submit & Gain Approval of Interface Control Document	100 hrs	15 days	Fri 1/29/21	Fri 2/19/21	Cerner, DHHR, IV&V
897	2.2.3.1.1.2	Pop Record Data Source #3: TBD	470 hrs	55 days	Vion 11/30/20	Fri 2/19/21	
898	2.2.3.1.1.2	Identify Data Source Steward	5 hrs	1 day	vion 11/30/20	Vion 11/30/20	DHHR
899	2.2.3.1.1.2	Complete Data Discovery Documents	15 hrs	1 day	Vion 11/30/20	Von 11/30/26	DHHR
900	2.2.3.1.1.2	Submit Data Dictionary	5 hrs	1 day	vion 11/30/20	Vion 11/30/20	DHHR
901	2.2.3.1.1.2	Determine Ongoing Load Timeline	5 hrs	1 day	Vion 11/30/20	Vion 11/30/20	Cemer, DHHR
902	2.2.3.1.1.	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day	Mon 11/30/20	Mon 11/30/20	Cerner, DHHR
903	2.2.3.1.1.	Request & Set Up System IDs (Instructions Provided by Cemer Integration Lead)	5 hrs	1 day	Mon 11/30/20	Mon 11/30/20	DHHR
904	2.2.3.1.1.	Create Source IDs	5 hrs	1 day	Vion 11/30/2	(vlon 11/30/2	(Cemer
905	2.2.3.1.1.	Create & Submit Sample	20 hrs	1 day	Tue 12/1/20	Tue 12/1/20	DHHR
906	2.2.3.1.1.	Develop & Upload Vetted File	25 hrs	3 days	Wed 12/2/20	Fri 12/4/20	Cemer, DHHR
907	2.2.3.1.1.	Complete Data Integration Mappings	100 hrs	16 days	Mon 12/7/20	Ned 12/30/2	(Cemer
908	2.2.3.1.1.	2 Data Mapping Review	20 hrs	5 days	Γhu 12/31/2	0 Thu 1/7/21	Cemer, DHHR
909	2.2.3.1.1.	Complete PCST	75 hrs	9 days	Fri 1/8/21	Thu 1/21/21	Cemer
910	2.2.3.1.1.	*Reference Record Ready	0 hrs	0 days	Thu 1/21/21	Thu 1/21/21	1
911	2.2.3.1.1.	Complete EMPI/MPM & Programs	30 hrs	5 days	Fri 1/22/21	Thu 1/28/21	1 Cemer
912	2.2.3.1.1.	*Internal Activation (Pop Record Ready)	0 hrs	0 days	Thu 1/28/21	Thu 1/28/21	1
913	2.2.3.1.1.	2 Complete Data Quality Report	25 hrs	5 days	Fri 1/29/21	Thu 2/4/21	Cemer
914	2.2.3.1.1.	2 Complete Historical Load (If Applicable)	30 hrs	10 days	Fri 1/29/21	Thu 2/11/2	1 Cemer, DHHR
915	2.2.3.1.1	Submit & Gain Approval of Interface Control  Document	100 hrs	15 days	Fri 1/29/21	Fri 2/19/21	Cemer, DHHR, IV&V
916	2.2.3.1.1.	2 Pop Record Data Source #4: TBD	470 hrs	55 days	Vion 11/30/2	C Fri 2/19/21	
917	2.2.3.1.1	2 Identify Data Source Steward	5 hrs	1 day	Vion 11/30/2	2Cylon 11/30/2	2(DHHR
918	2.2.3.1.1	Complete Data Discovery Documents	15 hrs	1 day	Vion 11/30/2	C/Ion 11/30/2	CDHHR
919	2.2.3.1.1	Submit Data Dictionary	5 hrs	1 day	Vion 11/30/2	20/lon 11/30/2	2CDHHR
920	2.2.3.1.1	.2 Determine Ongoing Load Timeline	5 hrs	1 day	vion 11/30/2	20/on 11/30/2	2(Cemer, DHHR
921	- 94.		5 hrs	1 day	Mon 11/30/20	Mon 11/30/20	Cemer, DHHR
922	2.2.3.1.1	Request & Set Up System IDs (Instructions Provided by Cerner Integration Lead)	di 5 hms	1 day	Mon 11/30/20	Mon 11/30/20	DHHR

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
923	2.2.3.1.1.2	Create Source IDs	5 hrs	1 day	I Vion 11/30/2	(Jon 11/30/2	Cemer
924	2.2.3.1.1.2	Create & Submit Sample	20 hrs	1 day	Tue 12/1/20		
925	2.2.3.1.1.2	Develop & Upload Vetted File	25 hrs	,			Cerner, DHHR
926	2.2.3.1.1.2	Complete Data Integration Mappings	100 hrs		Mon 12/7/20		
927	2.2.3.1.1.2	Data Mapping Review	20 hrs				Cerner, DHHR
928	2.2.3.1.1.2	Complete PCST	75 hrs	9 days		Thu 1/21/21	
929	2.2.3.1.1.2	*Reference Record Ready	0 hrs	0 days	Thu 1/21/21		
930	2.2.3.1.1.2	Complete EMPI/MPM & Programs	30 hrs	5 days	Fri 1/22/21		
931	2.2.3.1.1.2	*Internal Activation (Pop Record Ready)	0 hrs		Thu 1/28/21		
932	2.2.3.1.1.2	Complete Data Quality Report	25 hrs	5 days	Fri 1/29/21		
933	2.2.3.1.1.2	Complete Historical Load (If Applicable)	30 hrs	•			Cemer, DHHR
934	2.2.3.1.1.2	Submit & Gain Approval of Interface Control Document	100 hrs				Cemer, DHHR,
935	2.2.3.1.1.2	Pop Record Data Source #5: TBD	470 hrs	55 days	vion 11/30/20	Fri 2/19/21	IVQV
936	2.2.3.1.1.2	Identify Data Source Steward	5 hrs		vion 11/30/20		(DHHR
937	2.2.3.1.1.2	Complete Data Discovery Documents	15 hrs		vion 11/30/20		
938	2.2.3.1.1.2	Submit Data Dictionary	5 hrs	1 day	vion 11/30/20		
939	2.2.3.1.1.2	Determine Ongoing Load Timeline	5 hrs	1 day			Cemer, DHHR
940	2.2.3.1.1.2	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day	Mon 11/30/20	Mon 11/30/20	Cerner, DHHR
	2.2.3.1.1.2	Request & Set Up System IDs (Instructions Provided by Cemer Integration Lead)	5 hrs	1 day	Mon 11/30/20	Mon 11/30/20	DHHR
942	2.2.3.1.1.2	Create Source IDs	5 hrs	1 day	Vion 11/30/20		Cemer
943	2.2.3.1.1.2	Create & Submit Sample	20 hrs		Tue 12/1/20		
944	2.2.3.1.1.2	Develop & Upload Vetted File	25 hrs	3 days	Wed 12/2/20	Fri 12/4/20	Cemer, DHHR
945	2.2.3.1.1.2	Complete Data Integration Mappings	100 hrs		Mon 12/7/20		
946	2.2.3.1.1.2	Data Mapping Review	20 hrs				Cemer, DHHR
947	2.2.3.1.1.2	Complete PCST	75 hrs	9 days	Fri 1/8/21		
48	2.2.3.1.1.2	*Reference Record Ready	0 hrs	0 days	Thu 1/21/21		
49	2.2.3.1.1.2	Complete EMPI/MPM & Programs	30 hrs		Fri 1/22/21		Cemer
50	2.2.3.1.1.2	*Internal Activation (Pop Record Ready)	0 hrs		Thu 1/28/21		
51	2.2.3.1.1.2	Complete Data Quality Report	25 hrs	5 days	Fri 1/29/21		Cemer
52	2.2.3.1.1.2	Complete Historical Load (If Applicable)	30 hrs	10 days			Cerner, DHHR
953	2.2.3.1.1.2	Submit & Gain Approval of Interface Control Document	100 hrs			Fri 2/19/21	Cemer, DHHR,

D	WBS	Task Name	Work	Duration	Start i	Finish	Task Ow ner
954	2.2.3.1.2	Configure Solutions	4,650 hrs	39 days	vion 11/30/20\	Wed 1/27/21	
955	2.2.3.1.2.	HealtheEDW	1,625 hrs	39 days	vion 11/30/20	Wed 1/27/21	
956	2.2.3.1.2.	Analytics Reporting & Content Packages (5)	750 hrs	25 days	Vion 11/30/20	Wed 1/6/21	
957	2.2.3.1.2.	Avoidable ED	150 hrs	20 days	Vion 11/30/201	Tue 12/29/20	
958	2.2.3.1.2.	Build Data Sets & Data Models	50 hrs	5 days	vion 11/30/20	Fri 12/4/20	Cemer
959	2.2.3.1.2.	Configure Reports	50 hrs	5 days	Mon 12/7/20	Fri 12/11/20	Cerner
960	2.2.3.1.2.	Submit & Gain Approval of Report Specifications	50 hrs	10 days	Mon 12/14/20	Tue 12/29/20	Cemer, DHHR
961	2.2.3.1.2.	Access to Care	150 hrs	20 days	vion 11/30/20	Tue 12/29/20	
962	2.2.3.1.2.	Build Data Sets & Data Models	50 hrs	5 days	Vion 11/30/20	Fri 12/4/20	Cemer
963	2.2.3.1.2.	Configure Reports	50 hrs	5 days	Mon 12/7/20	Fri 12/11/20	Cemer
964	2.2.3.1.2.	Submit & Gain Approval of Report Specifications	50 hrs	10 days	Mon 12/14/20	Tue 12/29/20	Cemer, DHHR
965	2.2.3.1.2.	Opioid	150 hrs	20 days	Mon 12/7/20	Wed 1/6/21	
966	2.2.3.1.2.	Build Data Sets & Data Models	50 hrs	5 days	Mon 12/7/20	Fri 12/11/20	Cerner
967	2.2.3.1.2.	Configure Reports	50 hrs	5 days	vion 12/14/20	Fri 12/18/20	Cemer
968	2.2.3.1.2.	Submit & Gain Approval of Report Specifications	50 hrs	10 days	Mon 12/21/20	Wed 1/6/21	Cerner, DHHR
969	2.2.3.1.2.	1 Foster Care	150 hrs	20 days	Mon 12/7/20	Wed 1/6/21	
970	2.2.3.1.2	1 Build Data Sets & Data Models	50 hrs	5 days	Mon 12/7/20	Fri 12/11/20	Cemer
971	2.2.3.1.2	1 Configure Reports	50 hrs	5 days	Vion 12/14/20	Fri 12/18/20	Cerner
972	2.2.3.1.2	1 Submit & Gain Approval of Report Specifications	50 hrs	10 days	Mon 12/21/20	Wed 1/6/21	Cemer, DHHR
973	2.2.3.1.2	1 Utilization	150 hrs	20 days	Mon 12/7/20	Wed 1/6/21	
974	2.2.3.1.2	1 Build Data Sets & Data Models	50 hrs	5 days	Mon 12/7/20	Fri 12/11/20	Cerner
975	2.2.3.1.2	1 Configure Reports	50 hrs	5 days	vion 12/14/20	Fri 12/18/20	Cemer
976	2.2.3.1.2	1 Submit & Gain Approval of Report Specifications	s 50 hrs	10 days	Mon 12/21/20	Wed 1/6/21	Cerner, DHHR
977	2.2.3.1.2	1 Ad-Hoc Data Models (5)	875 hrs		Vion 11/30/20		
978	2,2.3.1.2	1 Ad-Hoc Data Model #6: TBD	175 hrs	39 days	Vion 11/30/2	(Wed 1/27/2	
979	2.2.3.1.2	1 Configure Data Model	75 hrs		Vion 11/30/2		
980	2.2.3.1.2	Submit and Gain Approval of Data Model Specifications	100 hrs				Cemer, DHHR
981	2.2.3.1.2	1 Ad-Hoc Data Model #7: TBD	175 hrs		√lon 11/30/2		
982	2.2.3.1.2	1 Configure Data Model	75 hrs	24 days	Von 11/30/2	Tue 1/5/21	Cemer

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
983	2.2.3.1.2.1	Submit and Gain Approval of Data Model Specifications	100 hrs	15 days	Wed 1/6/21	Wed 1/27/21	Cemer, DHHR
984	2.2.3.1.2.1		175 hrs	39 days	Vion 11/30/20	Wed 1/27/21	
985	2.2.3.1.2.1	Configure Data Model	75 hrs		Vion 11/30/20		
986	2.2.3.1.2.1	Submit and Gain Approval of Data Model Specifications	100 hrs				Cemer, DHHR
987	2.2.3.1.2.1	Ad-Hoc Data Model #9: TBD	175 hrs	39 days	Vion 11/30/20	Wed 1/27/21	
988	2.2.3.1.2.1	Configure Data Model	75 hrs		vion 11/30/20		
989	2.2.3.1.2.1	Submit and Gain Approval of Data Model Specifications	100 hrs				Cemer, DHHR
990	2.2.3.1.2.1	Ad-Hoc Data Model #10: TBD	175 hrs	39 days	vion 11/30/20	Wed 1/27/21	
991	2.2.3.1.2.1	Configure Data Model	75 hrs		vion 11/30/20		
992	2.2.3.1.2.1	Submit and Gain Approval of Data Model Specifications	100 hrs				Cemer, DHHR
	2.2.3.1.2.2	HealtheDataLab	1,000 hrs	25 days	Vion 11/30/20	Wed 1/6/21	
994	2.2.3.1.2.2	Data Science Analysis	1,000 hrs	25 days	vion 11/30/20	Wed 1/6/21	
995	2.2.3.1.2.2	Spend Forecasting Data Science Analysis	500 hrs		vion 11/30/20		Cemer
996	2.2.3.1.2.2	Matemal Morbidity Analysis Data Science Analysis	500 hrs	25 days	Mon 11/30/20	Wed 1/6/21	Cemer
997	2.2.3.1.2.5	Program Integrity Analytics & Case Management	2,025 hrs	36 days	vion 11/30/20	Fri 1/22/21	
998	2.2.3.1.2.5	Core Build	2,025 hrs		vion 11/30/20		Cemer
999	2.2.3.1.3	Set Up IdM and User Access Security	300 hrs		vion 11/30/20		
1000	1.2.1.3.1.3	Authentication	150 hrs		Vion 11/30/20		
1001	1.2.1.3.1.3	Configure User Name & Password Credentials	150 hrs				Cemer, DHHR
1002	1.2.1.3.1.8	Authorization	150 hrs	176	vion 11/30/2(		Comer, Brane
1003	1.2.1.3.1.8	Configure Permissions	150 hrs				Cemer, DHHR
1004	2.2.3.2	Deliverable Management	480 hrs		Wed 12/2/20		ocinci, Diane
1005	2.2.3.2.1	D034 Data Conversion Test Cases	120 hrs		Wed 12/2/201		
10 <b>06</b>	2.2.3.2.1.1	Deliverable Walkthrough	20 hrs				Cemer, DHHR, IV&
1007	2.2.3.2.1.2	Cemer PMO Submit to DHHR for Review	50 hrs		Mon 12/7/201		
1008	2.2.3.2.1.5	DHHR Review and Provide Comments	25 hrs		Tue 12/8/20 /		
1009	2.2.3.2.1.4	Cemer Revisions (As Necessary)	15 hrs		Thu 12/17/20/		
101 <b>0</b>	2.2.3.2.1.5	DHHR Review and Approval	10 hrs		√lon 12/28/2([		
1011	2.2.3.2.2	D035 Data Conversion Test Results	120 hrs		Tue 1/5/21		ornit, IVO
1012	2.2.3.2.2.1	Deliverable Walkthrough	20 hrs	3 days			Cerner, DHHR, IV&
1013	2.2.3.2.2.2	Cemer PMO Submit to DHHR for Review	50 hrs	1 day	Fri 1/8/21	Fri 1/8/21	

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
1014	2.2.3.2.2.3	DHHR Review and Provide Comments	25 hrs	7 days	Mon 1/11/21	Wed 1/20/21	DHHR, IV&V
1015	2.2.3.2.2.4	Cerner Revisions (As Necessary)	15 hrs	5 days	Thu 1/21/21	Wed 1/27/21	Cemer
1016	2.2.3.2.2.5	DHHR Review and Approval	10 hrs	2 days	Thu 1/28/21	Fri 1/29/21	DHHR, IV&V
1017	2.2.3.2.3	D036 Database Design Document and Data Models	120 hrs	18 days	Tue 1/19/21	Thu 2/11/21	
1018	2.2.3.2.3.	Deliverable Walkthrough	20 hrs	3 days	Tue 1/19/21	Thu 1/21/21	Cerner, DHHR, IV&
1019	2,2.3.2.3.2	Cemer PMO Submit to DHHR for Review	50 hrs	1 day	Fri 1/22/21	Fri 1/22/21	Cemer
1020	] 2.2.3.2.3.	DHHR Review and Provide Comments	25 hrs	7 days	Mon 1/25/21	Tue 2/2/21	DHHR, IV&V
M W	2.2.3.2.3.4		15 hrs	5 days	Wed 2/3/21	Tue 2/9/21	Cemer
	2.2.3.2.3.		10 hrs	2 days	Wed 2/10/21	Thu 2/11/21	DHHR, IV&V
	2.2.3.2.4	Data Load Schedule	120 hrs	18 days	Tue 1/12/21	Fri 2/5/21	
	2.2.3.2.4.	Deliverable Walkthrough	20 hrs	3 days	Tue 1/12/21	Thu 1/14/21	Cerner, DHHR, IV&
	2.2.3.2.4.	The second secon	50 hrs	1 day	Fri 1/15/21	Fri 1/15/21	Cemer
LALANTA,	2.2.3.2.4.		25 hrs	7 days	Tue 1/19/21	Wed 1/27/21	DHHR, IV&V
and the second	2.2.3.2.4.		15 hrs	5 days	Thu 1/28/21	Wed 2/3/21	Cemer
	2.2.3.2.4.		10 hrs	2 days	Thu 2/4/21	Fri 2/5/21	DHHR, IV&V
	2.2.3.3	Payment Milestone #12: Solution Design, Testing and Operations 1 Complete	0 hrs	0 days	Fri 2/19/21	Fri 2/19/21	
1030	2.2.4	Solution Design, Testing and Operations 2 (Cemer Testing)	3,890 hrs	23 days	Tue 1/19/21	Fri 2/19/21	
1031	2.2.4.1	Prepare for Testing	1,210 hrs	11 days	Tue 1/19/21	Tue 2/2/21	
1032	2.2.4.1.1	Review Project Team Capacity, Assign Test Case and Attestation Writing	10 hrs	1 day	Tue 1/19/21	Tue 1/19/21	Cerner
1033	2.2.4.1.2	Write Test Cases and Post Drafts for Review, Revision and Approval	1,000 hrs	7 days			Cerner, DHHR, IV&V
1034	2.2.4.1.3	Finalize Test Cases in Testing Tools	200 hrs	3 days	Fri 1/29/21	Tue 2/2/21	Cerner
1035	2.2.4.2	Cerner Testing	1,950 hrs	15 days	Fri 1/29/21	Fri 2/19/21	
1036	2.2.4.2.1	Execute Test Cases to Completion and Resolve Defects	1,500 hrs	15 days	Fri 1/29/21	Fri 2/19/21	Cemer
1037	2.2.4.2.2	Submit Testing Status Reports (Weekly)	450 hrs	15 days	Fri 1/29/21	Fri 2/19/21	Cemer
1038	2.2.4.3	Deliverable Management	730 hrs	20 days	Fri 1/22/21	Fri 2/19/21	
1039	2.2.4.3.1	D040 Interface Inventory	130 hrs	18 days	Fri 1/22/21	Wed 2/17/2	1
1040	2.2.4.3.1	.1 Deliverable Walkthrough	20 hrs	3 days	Fri 1/22/21	Tue 1/26/2	1 Cerner, DHHR, IV8
	2.2.4.3.1	THE STATE OF THE PARTY OF THE STATE OF THE S	60 hrs	1 day	Wed 1/27/2	1 Wed 1/27/2	1 Cemer
	2 2.2.4.3.1		25 hrs	7 days	Thu 1/28/2	1 Fri 2/5/21	DHHR, IV&V
	2.2.4.3.1		15 hrs	5 days	Mon 2/8/21	Fri 2/12/21	Cemer
	4 2.2.4.3.1		10 hrs	2 days	Tue 2/16/2	1 Wed 2/17/2	1 DHHR, IV&V

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
1045	2.2.4.3.2	D041 Load and Stress Test Cases	130 hrs	7 days	Mon 1/25/21	Tue 2/2/21	
1046	2.2.4.3.2.1	Deliverable Walkthrough	20 hrs				Cemer, DHHR, IV
1047	2.2.4.3.2.2	Cemer PMO Submit to DHHR for Review	60 hrs		Wed 1/27/21		
1048	2.2.4.3.2.3	DHHR Review and Provide Comments	25 hrs	2 days			DHHR, IV&V
1049	2.2.4.3.2.4	Cemer Revisions (As Necessary)	15 hrs	1 day	Mon 2/1/21		
10 <b>50</b>	2.2.4.3.2.5	DHHR Review and Approval	10 hrs	1 day			DHHR, IV&V
1051	2.2.4.3.3	D042 Load and Stress Test Results	110 hrs	10 days	Thu 2/4/21		
1052	2.2.4.3.3.1	Deliverable Walkthrough	20 hrs	2 days			Cemer, DHHR, IV
1053	2.2.4.3.3.2	Cemer PMO Submit to DHHR for Review	40 hrs	1 day	Mon 2/8/21		
1054	2.2.4.3.3.3	DHHR Review and Provide Comments	25 hrs	3 days			DHHR, IV&V
1055	2.2.4.3.3.4	Cemer Revisions (As Necessary)	15 hrs	2 days	Fri 2/12/21		
1056	2.2.4.3.3.5	DHHR Review and Approval	10 hrs		Wed 2/17/21		
1057	2.2.4.3.4	D043 Operational Readiness Plan	110 hrs	18 days	Fri 1/22/21		
1058	2.2.4.3.4.1	Deliverable Walkthrough	20 hrs	3 days			Cemer, DHHR, IV
1059	2.2.4.3.4.2	Cemer PMO Submit to DHHR for Review	40 hrs	1 day	Wed 1/27/21		
1060	2.2.4.3.4.5	DHHR Review and Provide Comments	25 hrs		Thu 1/28/21		
1061	2.2.4.3.4.4	Cemer Revisions (As Necessary)	15 hrs		Mon 2/8/21		
1062	2.2.4.3.4.5	DHHR Review and Approval	10 hrs		Tue 2/16/21		
1063	2.2.4.3.5	D044 Operational Readiness Test Scripts	140 hrs		Mon 1/25/21		DITITIO, TV OLV
1064	2.2.4.3.5.1	Deliverable Walkthrough	20 hrs				Cemer, DHHR, IV
1065	2.2.4.3.5.2	Cerner PMO Submit to DHHR for Review	70 hrs		Wed 1/27/21		
1066	2.2.4.3.5.3	DHHR Review and Provide Comments	25 hrs		Thu 1/28/21		
1067	2.2.4.3.5.4	Cerner Revisions (As Necessary)	15 hrs	1 day	Mon 2/1/21		
1068	2.2.4.3.5.5	DHHR Review and Approval	10 hrs	1 day	Tue 2/2/21		
1069	2.2.4.3.6	D045 Operational Readiness Test Results	110 hrs		Mon 2/1/21		Dillin, IVocv
107 <b>0</b>	2.2.4.3.6.1	Deliverable Walkthrough	20 hrs	2 days			Cemer, DHHR, IV8
1071	2.2.4.3.6.2	Cemer PMO Submit to DHHR for Review	40 hrs	1 day	Wed 2/3/21		
1072	2.2.4.3.6.3	DHHR Review and Provide Comments	25 hrs	7 days	Thu 2/4/21		
1073	2.2.4.3.6.4	Cemer Revisions (As Necessary)	15 hrs		Tue 2/16/21		
1074	2.2.4.3.6.5	DHHR Review and Approval	10 hrs	1 day	Fri 2/19/21		
1075	2.2.4.4	Payment Milestone #13: Solution Design, Testing and Operations 2 Complete	0 hrs	0 days	Fri 2/19/21		DITIN, IVOV
1076	2.2.5	Solution Design, Testing and Operations 3 (DHHR Testing/UAT)	4,020 hrs	24 days	Mon 2/22/21	Thu 3/25/21	

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
1077	<b>2</b> .2.5.1	DHHR Testing	2,000 hrs	20 days	Mon 2/22/21	Fri 3/19/21	
The state of the same page	2.2.5.1.1	User Acceptance Testing (UAT)	2,000 hrs	20 days	Mon 2/22/21	Fri 3/19/21	Cemer, DHHR
	2.2.5.2	Complete Attestation Documents (Per Applicable Requirement)	1,000 hrs	20 days	Mon 2/22/21	Fri 3/19/21	Cemer, DHHR, IV&V
1080	2.2.5.3	Deliverable Management	1,020 hrs	24 days	Mon 2/22/21	Thu 3/25/21	
1081	2.2.5.3.1	D046 Regression Test Cases	110 hrs	9 days	Mon 2/22/21	Thu 3/4/21	
1082	2.2.5.3.1	1 Deliverable Walkthrough	20 hrs	2 days	Mon 2/22/21	Tue 2/23/21	Cemer, DHHR, IV&
1083	2.2.5.3.1	2 Cemer PMO Submit to DHHR for Review	40 hrs	1 day	Wed 2/24/21	Wed 2/24/21	Cerner
1084	2.2.5.3.1	COMMENTS	25 hrs	3 days	Thu 2/25/21	Mon 3/1/21	DHHR, IV&V
1085	2.2.5.3.1	.z Cerner Revisions (As Necessary)	15 hrs	2 days	Tue 3/2/21	Wed 3/3/21	Cerner
1086	2.2.5.3.1	.5 DHHR Review and Approval	10 hrs	1 day	Thu 3/4/21	Thu 3/4/21	DHHR, IV&V
1087	2.2.5.3.2	D047 Regression Test Results	110 hrs	10 days	Fri 3/12/21	Thu 3/25/21	
1088	2.2.5.3.2	1 Deliverable Walkthrough	20 hrs	3 days	Fri 3/12/21	Tue 3/16/21	Cemer, DHHR, IV&V
CARL ABOUT NO	2.2.5.3.2		40 hrs	1 day	Wed 3/17/21	Wed 3/17/21	Cemer
	2.2.5.3.2		25 hrs	3 days	Thu 3/18/21	Mon 3/22/21	DHHR, IV&V
	2.2.5.3.2		15 hrs	2 days	Tue 3/23/21	Wed 3/24/21	l Cemer
1092	2.2.5.3.2	E DHHR Review and Approval	10 hrs	1 day	Thu 3/25/21	Thu 3/25/21	DHHR, IV&V
1093	2.2.5.3.3	D048 Reports and Forms Inventory	120 hrs	18 days	Tue 2/23/21	Thu 3/18/21	
	2.2.5.3.3		20 hrs	3 days	Tue 2/23/21	Thu 2/25/21	Cemer, DHHR, IV&\
	2.2.5.3.3	The Control of the Co	50 hrs	1 day	Fri 2/26/21	Fri 2/26/21	Cerner
1096	2.2.5.3.3	DHHR Review and Provide Comments	25 hrs	7 days	Mon 3/1/21	Tue 3/9/21	DHHR, IV&V
	2.2.5.3.3		15 hrs	5 days	Wed 3/10/2	1 Tue 3/16/2	1 Cemer
1098	2.2.5.3.3	B.£ DHHR Review and Approval	10 hrs	2 days	Wed 3/17/2	1 Thu 3/18/2	1 DHHR, IV&V
1099	2.2.5.3.4	D049 System Integration Plan	120 hrs	18 days	Mon 2/22/2	1 Wed 3/17/2	1
A	2.2.5.3.4		20 hrs	3 days	Mon 2/22/2	1 Wed 2/24/2	1 Cemer, DHHR, IV&
	2.2.5.3.4		50 hrs	1 day	Thu 2/25/2	1 Thu 2/25/2	1 Cemer
	2.2.5.3.4		25 hrs	7 days	Fri 2/26/21	Mon 3/8/21	DHHR, IV&V
	2.2.5.3.		15 hrs	5 days	Tue 3/9/21	Mon 3/15/2	1 Cemer
Markey Sale Ball	2.2.5.3.		10 hrs	2 days	Tue 3/16/2	1 Wed 3/17/2	1 DHHR, IV&V
	2.2.5.3.		110 hrs	9 days	Mon 2/22/2	1 Thu 3/4/21	
- 1 mm and 1 (2)	2.2.5.3		20 hrs	2 days	Mon 2/22/2	1 Tue 2/23/2	1 Cemer, DHHR, IV&
	2.2.5.3.		40 hrs	1 day	Wed 2/24/2	1 Wed 2/24/2	1 Cemer
	2.2.5.3.		25 hrs	3 days	Thu 2/25/2	1 Mon 3/1/2	1 DHHR, IV&V
	2.2.5.3.		15 hrs	2 days	Tue 3/2/21	1 Wed 3/3/2	1 Cerner

ID .	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
1110	2.2.5.3.5.5	DHHR Review and Approval	10 hrs	1 day	Thu 3/4/21	Thu 3/4/21	DHHR, IV&V
1111	2.2.5.3.6	D051 System Integration Test Results	110 hrs		Fri 3/12/21		
1112	2.2.5.3.6.1	Deliverable Walkthrough	20 hrs	3 days			Cemer, DHHR, IV&
1113	2.2.5.3.6.2	Cerner PMO Submit to DHHR for Review	40 hrs	1 day		Wed 3/17/21	
1114	2.2.5.3.6.3	DHHR Review and Provide Comments	25 hrs	3 days			DHHR, IV&V
1115	2.2.5.3.6.4	Cemer Revisions (As Necessary)	15 hrs	4	Tue 3/23/21		
1116	2.2.5.3.6.5	DHHR Review and Approval	10 hrs	1 day			DHHR, IV&V
1117	2.2.5.3.7	D052 Training Management Plan	120 hrs		Fri 2/26/21		
1118	2.2.5.3.7.1	Deliverable Walkthrough	20 hrs	3 days			Cemer, DHHR, IV&
1119	2.2.5.3.7.2	Cemer PMO Submit to DHHR for Review	50 hrs	1 day		Wed 3/3/21	
1120	2.2.5.3.7.3	DHHR Review and Provide Comments	25 hrs	7 days			DHHR, IV&V
1121	2.2.5.3.7.4	Cerner Revisions (As Necessary)	15 hrs		Mon 3/15/21		
1122	2.2.5.3.7.5	DHHR Review and Approval	10 hrs		Mon 3/22/21		
1123	2.2.5.3.8	D053 User Acceptance Test Cases	110 hrs		Mon 2/22/21		DHIR, IV&V
1124	2.2.5.3.8.1	Deliverable Walkthrough	20 hrs				Cerner, DHHR, IV&
1125	2.2.5.3.8.2	Cemer PMO Submit to DHHR for Review	40 hrs		Wed 2/24/21		
1126	2.2.5.3.8.3	DHHR Review and Provide Comments	25 hrs		Thu 2/25/21		
1127	2.2.5.3.8.4	Cemer Revisions (As Necessary)	15 hrs	2 days		Wed 3/3/21	
1128	2.2.5.3.8.	DHHR Review and Approval	10 hrs	1 day		Thu 3/4/21	
1129	2.2.5.3.9	D054 User Acceptance Test Results and Letter	110 hrs	10 days	Fri 3/12/21		DHIIK, IV&V
1130	2.2.5.3.9.1	Deliverable Walkthrough	20 hrs	3 days			Cemer, DHHR, IV&\
1131	2.2.5.3.9.2	Cerner PMO Submit to DHHR for Review	40 hrs		Wed 3/17/21		
1132	2.2.5.3.9.3	DHHR Review and Provide Comments	25 hrs		Thu 3/18/21		
1133	2.2.5.3.9.4	Cerner Revisions (As Necessary)	15 hrs		Tue 3/23/21		
1134	2.2.5.3.9.5	DHHR Review and Approval	10 hrs		Thu 3/25/21		
1135	2.2.5.4	Payment Milestone #14: Solution Design, Testing and Operations 3 Complete	0 hrs		Thu 3/25/21		DICK, IV&V
1136	2.2.6	Solution Deployment 1 (Prepare for Cutover)	755 hrs	15 days	Mon 3/22/21	Fri 4/9/21	
1137	2.2.6.1	Deliverable Management	755 hrs		Mon 3/22/21		
1138	2.2.6.1.1	D055 Cutover Play Book	270 hrs		Mon 3/22/21		The state of the s
1139	2.2.6.1.1.1	Deliverable Walkthrough	20 hrs				Cemer, DHHR, IV&\
1140	2.2.6.1.1.2	Cemer PMO Submit to DHHR for Review	200 hrs		Thu 3/25/21		
1141	2.2.6.1.1.3	DHHR Review and Provide Comments	25 hrs		Fri 3/26/21		
1142	2.2.6.1.1.4	Cerner Revisions (As Necessary)	15 hrs	3 days		Tue 4/6/21	1

)	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
1143	2.2.6.1.1.5	DHHR Review and Approval	10 hrs	1 day	Wed 4/7/21	Wed 4/7/21	DHHR, IV&V
	2.2.6.1.2	D056 Federal Review Supporting Documentation	270 hrs	9 days	Wed 3/24/21	Mon 4/5/21	
1145	2.2.6.1.2.1	Deliverable Walkthrough	20 hrs	2 days	Wed 3/24/21	Thu 3/25/21	Cerner, DHHR, IV&\
	2.2.6.1.2.2		200 hrs	1 day	Fri 3/26/21	Fri 3/26/21	Cemer
	2.2.6.1.2.3		25 hrs	3 days	Mon 3/29/21	Wed 3/31/21	DHHR, IV&V
1148	2.2.6.1.2.4	Cerner Revisions (As Necessary)	15 hrs	2 days	Thu 4/1/21	Fri 4/2/21	Cerner
	2.2.6.1.2.5		10 hrs	1 day	Mon 4/5/21	Mon 4/5/21	DHHR, IV&V
	2.2.6.1.3	D057 Rollout Plan	120 hrs	9 days	Mon 3/29/21	Thu 4/8/21	
Street Brown P. Co.	2.2.6.1.3.	Deliverable Walkthrough	20 hrs	2 days	Mon 3/29/21	Tue 3/30/21	Cemer, DHHR, IV&
Programme and NA	2.2.6.1.3.		50 hrs	1 day	Wed 3/31/21	Wed 3/31/21	Cemer
	2,2.6.1.3.		25 hrs	3 days	Thu 4/1/21	Mon 4/5/21	DHHR, IV&V
	2.2.6.1.3.		15 hrs	2 days	Tue 4/6/21	Wed 4/7/21	Cemer
- 100 THE - 1	2.2.6.1.3.		10 hrs	1 day	Thu 4/8/21	Thu 4/8/21	DHHR, IV&V
A 10 MM	2.2.6.1.4	D058 Implementation Certification Letter	95 hrs	3 days	Wed 4/7/21	Fri 4/9/21	
	2.2.6.1.4.	Deliverable Walkthrough	20 hrs	1 day	Wed 4/7/21	Wed 4/7/21	Cemer, DHHR, IV&
	2.2.6.1.4.		50 hrs	1 day	Thu 4/8/21	Thu 4/8/21	Cemer
	2.2.6.1.4.		25 hrs	1 day	Fri 4/9/21	Fri 4/9/21	DHHR, IV&V
	2.2.6.2	Payment Milestone #15: Solution Deployment 1	0 hrs	0 days	Fri 4/9/21	Fri 4/9/21	
4 4 M M M	2.2.7	Solution Deployment 2 (Cutover to Production)	3,610 hrs	15 days	Mon 4/12/21	Fri 4/30/21	
1162	2.2.7.1	Complete Cutover to Production Tasks and Activities	3,000 hrs	15 days	Mon 4/12/21	Fri 4/30/21	Cerner
1163	2.2.7.2	Deliverable Management	610 hrs	15 days	Mon 4/12/21	Fri 4/30/21	
	2.2.7.2.1	D060 Operational Milestone Review	120 hrs	10 days	Mon 4/19/21	Fri 4/30/21	
	2.2.7.2.1	1 Deliverable Walkthrough	20 hrs	1 day	Mon 4/19/21	Mon 4/19/2	1 Cemer, DHHR, IV8
1166	2.2.7.2.1	2 Cerner PMO Submit to DHHR for Review	50 hrs	1 day	Tue 4/20/21	Tue 4/20/2	Cemer
	2.2.7.2.1		25 hrs	3 days	Wed 4/21/21	1 Fri 4/23/21	DHHR, IV&V
	2.2.7.2.1	0 P 11 (4 N)	15 hrs	3 days	Mon 4/26/2	1 Wed 4/28/2	1 Cemer
1169	2.2.7.2.1	.t DHHR Review and Approval	10 hrs	2 days	Thu 4/29/21	Fri 4/30/21	DHHR, IV&V
	2.2.7.2.2		190 hrs	10 days	Mon 4/19/2	1 Fri 4/30/21	
1171	2.2.7.2.2	.1 Deliverable Walkthrough	20 hrs	1 day	Mon 4/19/2	1 Mon 4/19/2	1 Cemer, DHHR, IV
	2.2.7.2.2		120 hrs	1 day	Tue 4/20/2	1 Tue 4/20/2	1 Cemer
	2.2.7.2.2		25 hrs	3 days	Wed 4/21/2	1 Fri 4/23/21	DHHR, IV&V
	2.2.7.2.2		15 hrs	3 days	Mon 4/26/2	1 Wed 4/28/2	1 Cemer
NAMES OF THE PARTY	2.2.7.2.2		10 hrs	2 days	Thu 4/29/2	1 Fri 4/30/21	DHHR, IV&V

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
1176	2.2.7.2.3	D062 Report Distribution Schedule	130 hrs	10 days	Mon 4/19/21	Eri 4/30/24	
1177	2.2.7.2.3.1	Deliverable Walkthrough	20 hrs				Cerner, DHHR, IV&
1178	2.2.7.2.3.2	Cemer PMO Submit to DHHR for Review	60 hrs		Tue 4/20/21		
1179	2.2.7.2.3.3	DHHR Review and Provide Comments	25 hrs				DHHR, IV&V
1180	2.2.7.2.3.4	Cemer Revisions (As Necessary)	15 hrs		Mon 4/26/21		
1181	2.2.7.2.3.5	DHHR Review and Approval	10 hrs				DHHR, IV&V
1182	2.2.7.2.4	D063 Solution Health Monitoring Plan	170 hrs		Mon 4/19/21		DITIN, IVQV
1183	2.2.7.2.4.1	Deliverable Walkthrough	20 hrs				Cemer, DHHR, IV&
1184	2.2.7.2.4.2	Cemer PMO Submit to DHHR for Review	100 hrs		Tue 4/20/21		
1185	2.2.7.2.4.3	DHHR Review and Provide Comments	25 hrs		Wed 4/21/21		
1186	2.2.7.2.4.4	Cerner Revisions (As Necessary)	15 hrs		Mon 4/26/21		
1187	2.2.7.2.4.5	DHHR Review and Approval	10 hrs				
1188	2.2.7.3	Payment Milestone #16: Solution Deployment 2	0 hrs		Thu 4/29/21		DHHR, IV&V
1189	2.2.8	Solution Deployment 3 (Training)	1,465 hrs	0 days	Fri 4/30/21		
1190	2.2.8.1	Training	1,000 hrs	4 days	Mon 4/12/21		
1191	2.2.8.1.1	Conduct Train the Trainer Event(s) & Maintenance Training Events	1,000 hrs		Mon 5/3/21 Mon 5/3/21		Cemer, DHHR,
1192	2.2.8.2	Deliverable Management	465 hrs	20 days	Mon 4/12/21	Fri 5/7/24	IV&V
1193	2.2.8.2.1	D065 System and User Documentation	190 hrs		Mon 4/12/21		
1194	2.2.8.2.1.1	Deliverable Walkthrough	20 hrs				Cerner, DHHR, IV&V
1195	2.2.8.2.1.2	Cemer PMO Submit to DHHR for Review	120 hrs		Wed 4/14/21		
1196	2.2.8.2.1.5	DHHR Review and Provide Comments	25 hrs		Thu 4/15/21		
1197	2.2.8.2.1.4	Cemer Revisions (As Necessary)	15 hrs		Mon 4/26/21		
1198	2.2.8.2.1.5	DHHR Review and Approval	10 hrs		Thu 4/29/21		
1199	2.2.8.2.2	D066 Training Materials	190 hrs		Mon 4/12/21		DHIR, IV&V
1200	2.2.8.2.2.1	Deliverable Walkthrough	20 hrs				Carran BUUR WAN
1201	2.2.8.2.2.2	Cemer PMO Submit to DHHR for Review	120 hrs		Wed 4/14/21		Cemer, DHHR, IV&
1202	2.2.8.2.2.3	DHHR Review and Provide Comments	25 hrs				
1203	2.2.8.2.2.4	Cemer Revisions (As Necessary)	15 hrs		Thu 4/15/21		
1204	2.2.8.2.2.5	DHHR Review and Approval	10 hrs		Mon 4/26/21 \		
1205	2.2.8.2.3	D067 Training Report	50 hrs		Thu 4/29/21 Thu 5/6/21		DHHK, IV&V
1206	2.2.8.2.3.1	Deliverable Walkthrough	15 hrs	2 days 1 day		Fri 5/7/21	On an an an angle of the control of
1207	2.2.8.2.3.2	Cemer PMO Submit to DHHR for Review	25 hrs				Cemer, DHHR, IV&V
1208	2.2.8.2.3.5	DHHR Review and Approval	_	1 day	Thu 5/6/21		
	******* ·** * * \$ \$		10 hrs	1 day	Fri 5/7/21	Fri 5/7/21	DHHR, IV&V

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
1209	2.2.8.2.4	D068 Training Schedule	35 hrs	5 days	Mon 4/19/21	Fri 4/23/21	
1210	2.2.8.2.4.1	Deliverable Walkthrough	10 hrs	1 day	Mon 4/19/21	Mon 4/19/21	Cerner, DHHR, IV&
1211	2.2.8.2.4.2	Cemer PMO Submit to DHHR for Review	20 hrs	1 day	Tue 4/20/21	Tue 4/20/21	Cemer
1212	2.2.8.2.4.3	DHHR Review and Approval	5 hrs	1 day	Wed 4/21/21	Wed 4/21/21	DHHR, IV&V
1213	2.2.8.3	Payment Milestone #17: Solution Deployment 3	0 hrs	0 days	Fri 5/7/21	Fri 5/7/21	
1214	2.3	DDI Release 3	52,570 hrs	247 days	Mon 11/9/20	Fri 11/5/21	
1215	2.3.1	Solution Planning 1 (Design Strategy)	2,070 hrs	18 days	Mon 11/9/20	Mon 12/7/20	)
1216	2.3.1.1	Events	1,800 h <b>rs</b>	9 days	Mon 11/9/20	Fri 11/20/20	
1217	2.3.1.1.1	Current State Review	1,000 hrs	4 days	Mon 11/9/20	Fri 11/13/20	Cerner, DHHR, IV&\
1218	2.3.1.1.2	Design Strategy Workshops	800 hrs	5 days	Won 11/16/2	( Fri 11/20/20	
	2.3.1.1.2.	1 Data Integration Workshop	160 hrs	1 day	Vion 11/16/2	(vion 11/16/2	(Cemer, DHHR, IV&)
1220	2.3.1.1.2.	Solution Configuration Workshop	480 hrs	3 days	Tue 11/17/2	0Γhu 11/19/2	0Cemer, DHHR, IV&
1221	2.3.1.1.2.	Identity Management & User Access Security Workshop	160 hrs	1 day	Fri 11/20/20	Fri 11/20/20	Cemer, DHHR,
1222	2.3.1.2	Deliverable Management	270 hrs	18 days	Mon 11/9/20	Mon 12/7/20	D :
1223	2.3.1.2.1	D019 Testing Management Plan	270 hrs	18 days	Mon 11/9/20	Mon 12/7/20	0
1224	2.3.1.2.1.	1 Deliverable Walkthrough	20 hrs	3 days	Mon 11/9/20	Thu 11/12/2	0Cemer, DHHR, IV&V
1225	2.3.1.2.1.	Cemer PMO Submit to DHHR for Review	200 h <b>rs</b>	1 day	Fri 11/13/20	Fri 11/13/20	) Cemer
1226	2.3.1.2.1.	5 DHHR Review and Provide Comments	25 hrs	7 days	Vion 11/16/2	(Tue 11/24/2	ODHHR, IV&V
-0	2.3.1.2.1.		15 hrs	5 days	Ned 11/25/2	(Thu 12/3/2	0 Cemer
and the same transfer	2.3.1.2.1.		10 hrs	2 days	Fri 12/4/20	Mon 12/7/2	0 DHHR, IV&V
1229	2.3.1.3	Payment Milestone #18: Solution Planning 1	0 hrs	0 days	Mon 12/7/2	0 Mon 12/7/2	0
1230	2.3.2	Solution Planning 2 (Design Confirmation)	420 hrs	18 days	vion 11/30/2	20Ned 12/23/2	20
1231	2.3.2.1	Finalize and Validate Design Workbooks	250 hrs	9 days	Vion 11/30/2	2CFhu 12/10/2	20Cemer, DHHR
1232	2.3.2.2	Deliverable Management	170 hrs	18 days	√lon 11/30/2	2(Ned 12/23/2	20
1233	2.3.2.2.1	D024 Requirements Traceability Matrix (RTM)	170 hrs	18 days	vion 11/30/2	20/Ved 12/23/2	20
1234	2.3.2.2.1	.1 Deliverable Walkthrough	20 hrs	3 days	Vion 11/30/2	2(Wed 12/2/2	0 Cemer, DHHR, IV&
1235	2.3.2.2.1	.2 Cemer PMO Submit to DHHR for Review	100 hrs	1 day	Thu 12/3/2	0 Thu 12/3/2	0 Cerner
10 mg 20 mg 10 mg	2.3.2.2.1		25 hrs	7 days	Fri 12/4/20	vion 12/14/	2(DHHR, IV&V
. L. 197	2.3.2.2.1		15 hrs	5 days	Γue 12/15/2	20/lon 12/21/	2(Cerner
	2.3.2.2.1		10 hrs	2 days	Tue 12/22/2	20/ved 12/23/	2(DHHR, IV&V
1	2.3.2.3	Payment Milestone #19: Solution Planning 2	0 hrs	0 days	Ned 12/23/	2( <i>N</i> ed 12/23/	20
Yunnamm 1	2.3.3	Solution Design, Testing and Operations 1 (Technical Configuration)	21,505 hrs	80 days	Mon 12/14/20	Fri 4/9/21	

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
1241	2.3.3.1	Technical Configuration	21,025 hrs	80 davs	i vion 12/14/20	Fri 4/9/21	
1242	2.3.3.1.1	Ingest and Onboard Data	6,400 hrs		Mon 12/14/20		
1243	2.3.3.1.1.1	Direct to EDW (15 Sources)	4,050 hrs		Vion 12/14/20		
1244	2.3.3.1.1.1	D2EDW Data Source #1: TBD	270 hrs		Vion 12/14/20		
1245	2.3.3.1.1.1	Identify Data Source Steward	5 hrs		Vion 12/14/20		
1246	2.3.3.1.1.1	Complete Data Discovery Documents	15 hrs		Tue 12/15/20		
1247	2.3.3.1.1.1	Submit Data Dictionary	5 hrs		Γue 12/15/20		
1248	2.3.3.1.1.1	Determine Ongoing Load Timeline	5 hrs	1 day			Cemer, DHHR
1249	2.3.3.1.1.1	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day	Tue 12/15/20	Tue 12/15/20	Cemer, DHHR
1250	2.3.3.1.1.1	Create & Submit Sample Files	20 hrs	2 days	Ned 12/16/20		DHHR
1251	2.3.3.1.1.1	Upload Vetted/Final Files	25 hrs		Fri 12/18/20		
1252	2.3.3.1.1.1	Create Source Data Sets, Process and Validate	30 hrs		Mon 1/4/21		
Contract -	2.3.3.1.1.1	*Internal Activation	5 hrs	1 day	Fri 1/15/21	Fri 1/15/21	Cemer
1254	2.3.3.1.1.1	Complete Data Quality Report	25 hrs	7 days	Tue 1/19/21		
1255	2.3.3.1.1.1	Complete Historical Load (If Applicable)	30 hrs				Cemer, DHHR
or sometal	2.3.3.1.1.1	Submit and Gain Approval of Interface Control Document	100 hrs				Cemer, DHHR,
	2.3.3.1.1.1.	D2EDW Data Source #2: TBD	270 hrs	37 days	Mon 12/14/20	Mon 2/8/21	
er de de	2.3.3.1.1.1	Identify Data Source Steward	5 hrs	1 day	vion 12/14/2(v	/lon 12/14/20	DHHR
1259	2.3.3.1.1.1	Complete Data Discovery Documents	15 hrs	1 day	Tue 12/15/201	ue 12/15/20	DHHR
	2.3.3.1.1.1	Submit Data Dictionary	5 hrs	1 day	Tue 12/15/201	ue 12/15/20	DHHR
F. 104-11.	2.3.3.1.1.1	Determine Ongoing Load Timeline	5 hrs	1 day	Fue 12/15/201	ue 12/15/20	Cemer, DHHR
·	2.3.3.1.1.1	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day	Tue 12/15/20	Tue 12/15/20	Cerner, DHHR
	2.3.3.1.1.1	Create & Submit Sample Files	20 hrs	2 days	Ned 12/16/201	hu 12/17/20	DHHR
	2.3.3.1.1.1	Upload Vetted/Final Files	25 hrs	8 days	Fri 12/18/20 T	hu 12/31/20	DHHR
	2.3.3.1.1.1	Create Source Data Sets, Process and Validate	30 hrs	9 days	Mon 1/4/21	Thu 1/14/21	Cemer
	2.3.3.1.1.1	*Internal Activation	5 hrs	1 day	Fri 1/15/21	Fri 1/15/21	Cemer
	2.3.3.1.1.1	Complete Data Quality Report	25 hrs	7 days	Tue 1/19/21 V	Wed 1/27/21	Cemer
	2.3.3.1.1.1	Complete Historical Load (If Applicable)	30 hrs				Cemer, DHHR
ورد مدعده	2.3.3.1.1.1	Submit and Gain Approval of Interface Control Document	100 hrs			Mon 2/8/21	Cemer, DHHR,
	2.3.3.1.1.1.	D2EDW Data Source #3: TBD	270 hrs	37 days	Mon 12/14/20		
1271	2.3.3.1.1.1	Identify Data Source Steward	5 hrs	1 day	√lon 12/14/2(√l	lon 12/14/21	DHHR

ID .	WBS	Task Name		Work	Duration	Start	Finish	Task Ow ner
1272	2.3.3.1.1.1	Contract of the	Complete Data Discovery Documents	15 hrs	1 day	гие 12/15/20	Tue 12/15/20	DHHR
	2.3.3.1.1.1		Submit Data Dictionary	5 hrs	1 day	Tue 12/15/20	Tue 12/15/20	DHHR
1274	2.3.3.1.1.1	1	Determine Ongoing Load Timeline	5 hrs	1 day	Tue 12/15/20	Γue 12/15/20	Cerner, DHHR
1275	2.3.3.1.1.1	ı	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day	Tue 12/15/20	Tue 12/15/20	Cemer, DHHR
1276	2.3.3.1.1.	1	Create & Submit Sample Files	20 hrs	2 days	Ned 12/16/20	Thu 12/17/20	DHHR
1277	2.3.3.1.1.1	1	Upload Vetted/Final Files	25 hrs	8 days	Fri 12/18/20	Thu 12/31/20	DHHR
1278	2.3.3.1.1.	1	Create Source Data Sets, Process and Validate	30 hrs	9 days	Mon 1/4/21	Thu 1/14/21	Cerner
1279	2.3.3.1.1.	1	*Internal Activation	5 hrs	1 day	Fri 1/15/21	Fri 1/15/21	Cemer
1280	2.3.3.1.1.		Complete Data Quality Report	25 hrs	7 days	Tue 1/19/21	Wed 1/27/21	Cemer
1281	2.3.3.1.1.	1	Complete Historical Load (If Applicable)	30 hrs	10 days	Tue 1/19/21	Mon 2/1/21	Cemer, DHHR
	2.3.3.1.1.		Submit and Gain Approval of Interface Control Document	100 hrs	15 days	Tue 1/19/21	Mon 2/8/21	Cemer, DHHR, IV&V
1283	2.3.3.1.1.1		D2EDW Data Source #4: TBD	270 hrs	37 days	Mon 12/14/20	Mon 2/8/21	
1284	2.3.3.1.1.	1	Identify Data Source Steward	5 hrs	1 day	Vion 12/14/20	vion 12/14/2	OHHR
1285	2.3.3.1.1.	1	Complete Data Discovery Documents	15 hrs	1 day	Tue 12/15/20	Γue 12/15/2	DHHR
1286	2.3.3.1.1.	1	Submit Data Dictionary	5 hrs	1 day	Tue 12/15/20	Tue 12/15/2	ODHHR
	2.3.3.1.1.		Determine Ongoing Load Timeline	5 hrs	1 day	Tue 12/15/20	Tue 12/15/2	Cerner, DHHR
1288	2.3.3.1.1.	1	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day	Tue 12/15/20	Tue 12/15/20	Cemer, DHHR
1289	2.3.3.1.1.	.1	Create & Submit Sample Files	20 hrs	2 days	Ned 12/16/2	Thu 12/17/2	ODHHR
1290	2.3.3.1.1.	.1	Upload Vetted/Final Files	25 hrs	8 days	Fri 12/18/20	Γhu 12/31/2	0 DHHR
1291	2.3.3.1.1.	.1	Create Source Data Sets, Process and Validate	30 hrs	9 days	Mon 1/4/21	Thu 1/14/21	Cemer
1292	2.3.3.1.1	.1	*Internal Activation	5 hrs	1 day	Fri 1/15/21	Fri 1/15/21	Cemer
1293	2.3.3.1.1	.1	Complete Data Quality Report	25 hrs	7 days	Tue 1/19/21	Wed 1/27/2	1 Cemer
1294	2.3.3.1.1	.1	Complete Historical Load (If Applicable)	30 hrs	10 days	Tue 1/19/21	Mon 2/1/21	Cemer, DHHR
1295	2.3.3.1.1	.1	Submit and Gain Approval of Interface Control Document	100 hrs	15 days	Tue 1/19/21	Mon 2/8/21	Cemer, DHHR IV&V
1296	2.3.3.1.1.	1.	D2EDW Data Source #5: TBD	270 hrs	37 days	Mon 12/14/20	) Mon 2/8/21	
1297	2.3.3.1.1	.1	Identify Data Source Steward	5 hrs	1 day	vion 12/14/2	(vion 12/14/2	2(DHHR
1298	2.3.3.1.1	,1	Complete Data Discovery Documents	15 hrs	1 day	Tue 12/15/2	CTue 12/15/2	ODHHR
1299	2.3.3.1.1	.1	Submit Data Dictionary	5 hrs	1 day	Tue 12/15/2	CTue 12/15/2	ODHHR
1300	2.3.3.1.1	.1	Determine Ongoing Load Timeline	5 hrs	1 day	Γue 12/15/2	OTue 12/15/2	OCemer, DHHR
	2.3.3.1.1		Determine Historical Load Strategy (If Applicable)	5 hrs	1 day	Tue 12/15/20	Tue 12/15/20	Cerner, DHHR
1302	2.3.3.1.1	.1	Create & Submit Sample Files	20 hrs	2 days	Wed 12/16/2	(Thu 12/1 <b>7/</b> 2	20DHHR

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
1303	2.3.3.1.1.1	Upload Vetted/Final Files	25 hrs	8 days	Fri 12/18/20	   Thu 12/31/20	DHHR
1304	2.3.3.1.1.1	Create Source Data Sets, Process and Validate	30 hrs	9 days		Thu 1/14/21	
1305	2.3.3.1.1.1	*Internal Activation	5 hrs	1 day		Fri 1/15/21	
1306	2.3.3.1.1.1	Complete Data Quality Report	25 hrs	7 days	Tue 1/19/21		
1307	2.3.3.1.1.1	Complete Historical Load (If Applicable)	30 hrs				Cemer, DHHR
1308	2.3.3.1.1.1	Submit and Gain Approval of Interface Control Document	100 hrs				Cemer, DHHR,
1309	2.3.3.1.1.1.	D2EDW Data Source #6: TBD	270 hrs	37 days	Mon 1/11/21	Thu 3/4/21	IVOLV
1310	2.3.3.1.1.1	Identify Data Source Steward	5 hrs	1 day		Mon 1/11/21	DHHR
1311	2.3.3.1.1.1	Complete Data Discovery Documents	15 hrs	1 day		Tue 1/12/21	
1312	2.3.3.1.1.1	Submit Data Dictionary	5 hrs	1 day		Tue 1/12/21	
1313	2.3.3.1.1.1	Determine Ongoing Load Timeline	5 hrs	1 day			Cerner, DHHR
1314	2.3.3.1.1.1	Determine Historical Load Strategy (If Applicable	e) 5 hrs				Cemer, DHHR
1315	2.3.3.1.1.1	Create & Submit Sample Files	20 hrs	2 davs	Wed 1/13/21	Thu 1/14/21	DHHR
1316	2.3.3.1.1.1	Upload Vetted/Final Files	25 hrs		Fri 1/15/21		
1317	2.3.3.1.1.1	Create Source Data Sets, Process and Validate	30 hrs	,	Thu 1/28/21		
1318	2.3.3.1.1.1	*Internal Activation	5 hrs		Wed 2/10/21		
1319	2.3.3.1.1.1	Complete Data Quality Report	25 hrs		Thu 2/11/21		
1320	2.3.3.1.1.1	Complete Historical Load (If Applicable)	30 hrs				Cemer, DHHR
1321	2.3.3.1.1.1	Submit and Gain Approval of Interface Control Document	100 hrs			Thu 3/4/21	Cerner, DHHR,
1322	2.3.3.1.1.1.	D2EDW Data Source #7: TBD	270 hrs	37 days	Mon 1/11/21		I V OX V
323	2.3.3.1.1.1	Identify Data Source Steward	5 hrs	1 day	Mon 1/11/21		DHHR
1324	2.3.3.1.1.1	Complete Data Discovery Documents	15 hrs		Tue 1/12/21		
1325	2.3.3.1.1.1	Submit Data Dictionary	5 hrs		Tue 1/12/21		
326	2.3.3.1.1.1	Determine Ongoing Load Timeline	5 hrs				Cemer, DHHR
1327	2.3.3.1.1.1	Determine Historical Load Strategy (If Applicable	) 5 hrs	44			Cemer, DHHR
328	2.3.3.1.1.1	Create & Submit Sample Files	20 hrs	2 davs	Wed 1/13/21	Thu 1/14/21	DHHR
329	2.3.3.1.1.1	Upload Vetted/Final Files	25 hrs		Fri 1/15/21		
1330	2.3.3.1.1.1	Create Source Data Sets, Process and Validate	30 hrs		Thu 1/28/21		
331	2.3.3.1.1.1	*Internal Activation	5 hrs		Wed 2/10/21		
332	2.3.3.1.1.1	Complete Data Quality Report	25 hrs		Thu 2/11/21		
333	2.3.3.1.1.1	Complete Historical Load (If Applicable)	30 hrs	-			Cemer, DHHR

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
1334	2.3.3.1.1.1	Submit and Gain Approval of Interface Contr Document	ol 100 hrs	15 days	Thu 2/11/21		Cemer, DHHR, IV&V
1335	2.3.3.1.1.1.	D2EDW Data Source #8: TBD	270 hrs	37 days	Mon 1/11/21	Thu 3/4/21	
1336	2.3.3.1.1.1	Identify Data Source Steward	5 hrs	1 day	Mon 1/11/21	Mon 1/11/21	DHHR
1337	2.3.3.1.1.1	Complete Data Discovery Documents	15 hrs	1 day	Tue 1/12/21	Tue 1/12/21	DHHR
1338	2.3.3.1.1.1	Submit Data Dictionary	5 hrs	1 day	Tue 1/12/21	Tue 1/12/21	DHHR
1339	2.3.3.1.1.1	Determine Ongoing Load Timeline	5 hrs	1 day	Tue 1/12/21	Tue 1/12/21	Cerner, DHHR
1340	2.3.3.1.1.1	Determine Historical Load Strategy (If Applic	able) 5 hrs	1 day	Tue 1/12/21	Tue 1/12/21	Cemer, DHHR
1341	2.3.3.1.1.	Create & Submit Sample Files	20 hrs	2 days	Wed 1/13/21	Thu 1/14/21	DHHR
1342	2.3.3.1.1.	Upload Vetted/Final Files	25 hrs	8 days	Fri 1/15/21	Wed 1/27/21	DHHR
1343	2.3.3.1.1.	Create Source Data Sets, Process and Valida	ate 30 hrs	9 days	Thu 1/28/21	Tue 2/9/21	Cemer
1344	2.3.3.1.1.	*Internal Activation	5 hrs	1 day	Wed 2/10/21	Wed 2/10/21	Cerner
1345	2.3.3.1.1.	Complete Data Quality Report	25 hrs	7 days	Thu 2/11/21	Mon 2/22/21	Cemer
1346	2.3.3.1.1.	Complete Historical Load (If Applicable)	30 hrs	10 days	Thu 2/11/21	Thu 2/25/21	Cerner, DHHR
1347	2.3.3.1.1.	Submit and Gain Approval of Interface Cont Document	rol 100 hrs	15 days	Thu 2/11/21	Thu 3/4/21	Cemer, DHHR, IV&V
1348	2.3.3.1.1.1	D2EDW Data Source #9: TBD	270 hrs	37 days	Mon 1/11/21	Thu 3/4/21	
	2.3.3.1.1.		5 hrs	1 day	Mon 1/11/2	1 Mon 1/11/21	DHHR
1350	2.3.3.1.1.	Complete Data Discovery Documents	15 hrs	1 day	Tue 1/12/21	Tue 1/12/21	DHHR
1351	2.3.3.1.1.	Submit Data Dictionary	5 hrs	1 day	Tue 1/12/21	Tue 1/12/21	DHHR
1352	2.3.3.1.1.	Determine Ongoing Load Timeline	5 hrs	1 day	Tue 1/12/21	Tue 1/12/21	Cerner, DHHR
1353	2.3.3.1.1.	1 Determine Historical Load Strategy (If Applie	cable) 5 hrs	1 day	Tue 1/12/21	1 Tue 1/12/21	Cerner, DHHR
1354	2.3.3.1.1.	1 Create & Submit Sample Files	20 hrs	2 days	Wed 1/13/2	1 Thu 1/14/21	DHHR
1355	2.3.3.1.1.	1 Upload Vetted/Final Files	25 hrs	8 days	Fri 1/15/21	Wed 1/27/2	DHHR
1356	2.3.3.1.1	1 Create Source Data Sets, Process and Valid	ate 30 hrs	9 days	Thu 1/28/2	1 Tue 2/9/21	Cerner
1357	2.3.3.1.1	1 *Internal Activation	5 hrs	1 day	Wed 2/10/2	1 Wed 2/10/2	Cemer
1358	2.3.3.1.1	1 Complete Data Quality Report	25 hrs	7 days	Thu 2/11/2	1 Mon 2/22/2	l Cerner
	2.3.3.1.1		30 hrs	10 days	Thu 2/11/2	1 Thu 2/25/21	Cemer, DHHR
water were	2.3.3.1.1		trol 100 hrs	15 days	Thu 2/11/2	1 Thu 3/4/21	Cemer, DHHR, IV&V
1361	2.3.3.1.1.	D2EDW Data Source #10: TBD	270 hrs	37 days	Mon 1/11/2	1 Thu 3/4/21	
	2.3.3.1.1		5 hrs	1 day	Mon 1/11/2	1 Mon 1/11/2	1 DHHR
PROPERTY AND ADDRESS.	2.3.3.1.1		15 hrs	1 day	Tue 1/12/2	1 Tue 1/12/2	1 DHHR
1364	2.3.3.1.1	1 Submit Data Dictionary	5 hrs	1 day	Tue 1/12/2	1 Tue 1/12/2	1 DHHR

<b>I</b> D	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
1365	2.3.3.1.1.1	Determine Ongoing Load Timeline	5 hrs	1 day	Tue 1/12/21	tue 1/12/21	Cemer, DHHR
1366	2.3.3.1.1.1	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day			Cemer, DHHR
1367	2.3.3.1.1.1	Create & Submit Sample Files	20 hrs	2 days	Wed 1/13/21	Thu 1/14/21	DHHR
1368	2.3.3.1.1.1	Upload Vetted/Final Files	25 hrs	8 days		Wed 1/27/21	
1369	2.3.3.1.1.1	Create Source Data Sets, Process and Validate	30 hrs	9 days	Thu 1/28/21	Tue 2/9/21	Cemer
1370	2.3.3.1.1.1	*Internal Activation	5 hrs	1 day	Wed 2/10/21		
1371	2.3.3.1.1.1	Complete Data Quality Report	25 hrs	7 days	Thu 2/11/21	Mon 2/22/21	Cemer
1372	2.3.3.1.1.1	Complete Historical Load (If Applicable)	30 hrs				Cemer, DHHR
1373	2.3.3.1.1.1	Submit and Gain Approval of Interface Control Document	100 hrs				Cerner, DHHR,
1374	2.3.3.1.1.1	D2EDW Data Source #11: TBD	270 hrs	37 days	Wed 2/10/21	Fri 4/2/21	1747
1375	2.3.3.1.1.1	Identify Data Source Steward	5 hrs	1 day	Wed 2/10/21	Wed 2/10/21	DHHR
1376	2.3.3.1.1.1	Complete Data Discovery Documents	15 hrs	1 day		Thu 2/11/21	
	2.3.3.1.1.1	Submit Data Dictionary	5 hrs	1 day		Thu 2/11/21	
1378	2.3.3.1.1.1	Determine Ongoing Load Timeline	5 hrs	1 day	Thu 2/11/21	Thu 2/11/21	Cemer, DHHR
1379	2.3.3.1.1.1	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day			Cemer, DHHR
1380	2.3.3.1.1.1	Create & Submit Sample Files	20 hrs	2 days	Fri 2/12/21	Tue 2/16/21	DHHR
1381	2.3.3.1.1.1	Upload Vetted/Final Files	25 hrs		Wed 2/17/21		
1382	2.3.3.1.1.1	Create Source Data Sets, Process and Validate	30 hrs		Mon 3/1/21		
1383	2.3.3.1.1,1	*Internal Activation	5 hrs	1 day		Fri 3/12/21	
384	2.3.3.1.1.1	Complete Data Quality Report	25 hrs		Mon 3/15/21		
1385	2.3.3.1.1.1	Complete Historical Load (If Applicable)	30 hrs				Cemer, DHHR
1386	2.3.3.1.1.1	Submit and Gain Approval of Interface Control Document	100 hrs			Fri 4/2/21	Cerner, DHHR,
1387	2.3.3.1.1.1.	D2EDW Data Source #12: TBD	270 hrs	37 days	Wed 2/10/21		IVQV
388	2.3.3.1.1.1	Identify Data Source Steward	5 hrs	1 day	Wed 2/10/21		DHHR
389	2.3.3.1.1.1	Complete Data Discovery Documents	15 hrs		Thu 2/11/21		
390	2.3.3.1.1.1	Submit Data Dictionary	5 hrs		Thu 2/11/21		
391	2.3.3.1.1.1	Determine Ongoing Load Timeline	5 hrs				Cerner, DHHR
392	2.3.3.1.1.1	Determine Historical Load Strategy (If Applicable)	5 hrs				Cemer, DHHR
393	2.3.3.1.1.1	Create & Submit Sample Files	20 hrs	2 days	Fri 2/12/21	Tue 2/16/21	DHHR
394	2.3.3.1.1.1	Upload Vetted/Final Files	25 hrs		Wed 2/17/21		
395	2.3.3.1.1.1	Create Source Data Sets, Process and Validate	30 hrs		Mon 3/1/21		

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
1396	2.3.3.1.1.1	*Internal Activation	5 hrs	1 day	Fri 3/12/21	Fri 3/12/21	Cemer
1397	2.3.3.1.1.1	Complete Data Quality Report	25 hrs	7 days	Mon 3/15/21	Tue 3/23/21	Cemer
1398	2.3.3.1.1.1	Complete Historical Load (If Applicable)	30 hrs	10 days	Mon 3/15/21	Fri 3/26/21	Cerner, DHHR
1399	2.3.3.1.1.	Submit and Gain Approval of Interface Cor Document	ntrol 100 hrs	15 days	Mon 3/15/21		Cemer, DHHR, IV&V
1400	2.3.3.1.1.1.	D2EDW Data Source #13: TBD	270 hrs	37 days	Wed 2/10/21	Fri 4/2/21	
1401	2.3.3.1.1.	Identify Data Source Steward	5 hrs	1 day	Wed 2/10/21	Wed 2/10/21	DHHR
1402	2.3.3.1.1.	Complete Data Discovery Documents	15 hrs	1 day	Thu 2/11/21	Thu 2/11/21	DHHR
1403	2.3.3.1.1.	Submit Data Dictionary	5 hrs	1 day	Thu 2/11/21	Thu 2/11/21	DHHR
1404	2.3.3.1.1.	Determine Ongoing Load Timeline	5 hrs	1 day	Thu 2/11/21	Thu 2/11/21	Cemer, DHHR
1405	2.3.3.1.1.	Determine Historical Load Strategy (If App	icable) 5 hrs	1 day	Thu 2/11/21	Thu 2/11/21	Cemer, DHHR
1406	2.3.3.1.1.	Create & Submit Sample Files	20 hrs	2 days	Fri 2/12/21	Tue 2/16/21	DHHR
1407	2.3.3.1.1.	Upload Vetted/Final Files	25 hrs	8 days	Wed 2/17/21	Fri 2/26/21	DHHR
1408	2.3.3.1.1.	Create Source Data Sets, Process and Vali	date 30 hrs	9 days	Mon 3/1/21	Thu 3/11/21	Cemer
1409	2.3.3.1.1.	*Internal Activation	5 hrs	1 day	Fri 3/12/21	Fri 3/12/21	Cemer
1410	2.3.3.1.1.	Complete Data Quality Report	25 hrs	7 days	Mon 3/15/21	Tue 3/23/21	Cemer
	2.3.3.1.1.		30 hrs	10 days	Mon 3/15/21	Fri 3/26/21	Cerner, DHHR
	2.3.3.1.1.		ntrol 100 hrs	15 days	Mon 3/15/21	Fri 4/2/21	Cemer, DHHR IV&V
1413	2.3.3.1.1.1	. D2EDW Data Source #14: TBD	270 hrs	37 days	Wed 2/10/21	Fri 4/2/21	
1414	2.3.3.1.1.	1 Identify Data Source Steward	5 hrs	1 day	Wed 2/10/21	Wed 2/10/21	DHHR
1415	2.3.3.1.1.	1 Complete Data Discovery Documents	15 hrs	1 day	Thu 2/11/21	Thu 2/11/21	DHHR
1416	2.3.3.1.1.	1 Submit Data Dictionary	5 hrs	1 day	Thu 2/11/21	Thu 2/11/21	DHHR
1417	2.3.3.1.1	1 Determine Ongoing Load Timeline	5 hrs	1 day	Thu 2/11/21	Thu 2/11/21	Cemer, DHHR
1418	2.3.3.1.1	1 Determine Historical Load Strategy (If App	licable) 5 hrs	1 day	Thu 2/11/21	Thu 2/11/21	Cemer, DHHR
1419	2.3.3.1.1	1 Create & Submit Sample Files	20 hrs	2 days	Fri 2/12/21	Tue 2/16/21	DHHR
	2.3.3.1.1		25 hr <b>s</b>	8 days	Wed 2/17/21	Fri 2/26/21	DHHR
	2.3.3.1.1		idate 30 hrs	9 days	Mon 3/1/21	Thu 3/11/21	Cerner
	2.3.3.1.1		5 hrs	1 day	Fri 3/12/21	Fri 3/12/21	Cemer
	2.3.3.1.1		25 hrs	7 days	Mon 3/15/2	1 Tue 3/23/21	Cerner
34 1	2.3.3.1.1		30 hrs	10 days	Mon 3/15/2	1 Fri 3/26/21	Cemer, DHHR
CA. 2	2.3.3.1.1		ontrol 100 hrs	15 days	Mon 3/15/2	1 Fri 4/2/21	Cemer, DHHR
1426	2.3.3.1.1.	D2EDW Data Source #15: TBD	270 hrs	37 days	Wed 2/10/21	Fri 4/2/21	

lD	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
1427	2.3.3.1.1.1	Identify Data Source Steward	5 hrs	1 day	Wed 2/10/21	Wed 2/10/21	DHHR
1428	2.3.3.1.1.1	Complete Data Discovery Documents	15 hrs	1 day		Thu 2/11/21	
1429	2.3.3.1.1.1	Submit Data Dictionary	5 hrs	1 day		Thu 2/11/21	
1430	2.3.3.1.1.1	Determine Ongoing Load Timeline	5 hrs	1 day			Cemer, DHHR
1431	2.3.3.1.1.1	Determine Historical Load Strategy (If Applicable)	5 hrs	1 day			Cerner, DHHR
1432	2.3.3.1.1.1	Create & Submit Sample Files	20 hrs	2 days	Fri 2/12/21	Tue 2/16/21	DHHR
1433	2.3.3.1.1.1	Upload Vetted/Final Files	25 hrs	8 days	Wed 2/17/21		
1434	2.3.3.1.1.1	Create Source Data Sets, Process and Validate	30 hrs		Mon 3/1/21		
1435	2.3.3.1.1.1	*Internal Activation	5 hrs	1 day		Fri 3/12/21	
1436	2.3.3.1.1.1	Complete Data Quality Report	25 hrs	7 days	Mon 3/15/21		
1437	2.3.3.1.1.1	Complete Historical Load (If Applicable)	30 hrs				Cemer, DHHR
1438	2.3.3.1.1.1	Submit and Gain Approval of Interface Control Document	100 hrs			Fri 4/2/21	Cemer, DHHR,
1439	2.3.3.1.1.2	Mapped to Population Record (5 Sources)	2,350 hrs	76 days	Mon 12/14/20		
1440	2.3.3.1.1.2	Pop Record Data Source #1	470 hrs	68 days	vion 12/14/20	Wed 3/24/21	
1441	2.3.3.1.1.2	Identify Data Source Steward	5 hrs	1 day	vion 12/14/20	√ion 12/14/2(	DHHR
1442	2.3.3.1.1.2	Complete Data Discovery Documents	15 hrs	2 days	Tue 12/15/20	Ned 12/16/20	DHHR
1443	2.3.3.1.1.2	Submit Data Dictionary	5 hrs	2 days	Tue 12/15/20	Ned 12/16/20	DHHR
1444	2.3.3.1.1.2	Determine Ongoing Load Timeline	5 hrs	2 days	Tue 12/15/20	Ned 12/16/2(	Cemer, DHHR
445	2.3.3.1.1.2	Determine Historical Load Strategy (If Applicable)	5 hrs	2 days	Tue 12/15/20		Cemer, DHHR
	2.3.3.1.1.2	Request & Set Up System IDs (Instructions Provided by Cerner Integration Lead)	5 hrs	2 days	Tue 12/15/20		DHHR
	2.3.3.1.1.2	Create Source IDs	5 hrs	2 days	Thu 12/17/20	Fri 12/18/20	Cerner
	2.3.3.1.1.2	Create & Submit Sample	20 hrs	6 days	vion 12/21/20	Ned 12/30/20	DHHR
	2.3.3.1.1.2	Develop & Upload Vetted File	25 hrs	7 days	Thu 12/31/20	Mon 1/11/21	Cemer, DHHR
450	2.3.3.1.1.2	Complete Data Integration Mappings	100 hrs	16 days	Tue 1/12/21	Wed 2/3/21	Cemer
451	2.3.3.1.1.2	Data Mapping Review	20 hrs	5 days	Thu 2/4/21	Wed 2/10/21	Cerner, DHHR
452	2.3.3.1.1.2	Complete PCST	75 hrs	9 days	Thu 2/11/21	Wed 2/24/21	Cemer
453	2.3.3.1.1.2	*Reference Record Ready	0 hrs	0 days	Wed 2/24/21	Wed 2/24/21	
454	2.3.3.1.1.2	Complete EMPI/MPM & Programs	30 hrs	5 days	Thu 2/25/21	Wed 3/3/21	Cemer
455	2.3.3.1.1.2	*Internal Activation (Pop Record Ready)	0 hrs	0 days	Wed 3/3/21		
456	2.3.3.1.1.2	Complete Data Quality Report	25 hrs	5 days	Thu 3/4/21		Cemer
457	2.3.3.1.1.2	Complete Historical Load (If Applicable)	30 hrs	10 days	Thu 3/4/21		

)	WBS	Task Name		Work	Duration	Start	Finish	Task Owner
1458	2.3.3.1.1.2		Submit & Gain Approval of Interface Control Document	100 hrs	15 days	Thu 3/4/21	Wed 3/24/21	Cemer, DHHR,
459	2.3.3.1.1.2		Pop Record Data Source #2	470 hrs	68 days	vion 12/14/20	Wed 3/24/21	
460	2.3.3.1.1.2	2	Identify Data Source Steward	5 hrs	1 day	vion 12/14/20	Vion 12/14/20	DHHR
461	2.3.3.1.1.2		Complete Data Discovery Documents	15 hrs	2 days	Tue 12/15/20	Ned 12/16/20	DHHR
462	2.3.3.1.1.2	2	Submit Data Dictionary	5 hrs	2 days	Γue 12/15/20	Ned 12/16/20	DHHR
463	2.3.3.1.1.2	ž .	Determine Ongoing Load Timeline	5 hrs	2 days	Γue 12/15/20	Ned 12/16/20	Cerner, DHHR
1464	2.3.3.1.1.2	2	Determine Historical Load Strategy (If Applicable)	5 hrs	2 days	Tue 12/15/20	Wed 12/16/20	Cerner, DHHR
	2.3.3.1.1.		Request & Set Up System IDs (Instructions Provided by Cerner Integration Lead)	5 hrs	2 days	Tue 12/15/20	Wed 12/16/20	DHHR
466	2.3.3.1.1.	2	Create Source IDs	5 hrs	2 days	Thu 12/17/20	Fri 12/18/20	Cerner
467	2.3.3.1.1.	2	Create & Submit Sample	20 hrs	6 days	vion 12/21/20	(Ned 12/30/20	DHHR
1468	2.3.3.1.1.	2	Develop & Upload Vetted File	25 hrs	7 days	Thu 12/31/20	Mon 1/11/21	Cerner, DHHR
1469	2.3.3.1.1.	2	Complete Data Integration Mappings	100 hrs	16 days	Tue 1/12/21	Wed 2/3/21	Cerner
1470	2.3.3.1.1.	2	Data Mapping Review	20 hrs	5 days	Thu 2/4/21	Wed 2/10/21	Cemer, DHHR
1471	2.3.3.1.1.	2	Complete PCST	75 hrs	9 days	Thu 2/11/21	Wed 2/24/21	Cemer
1472	2.3.3.1.1.	2	*Reference Record Ready	0 hrs	0 days	Wed 2/24/21	Wed 2/24/21	
1473	2.3.3.1.1.	2	Complete EMPI/MPM & Programs	30 hrs	5 days	Thu 2/25/21	Wed 3/3/21	Cemer
1474	2.3.3.1.1.	2	*Internal Activation (Pop Record Ready)	0 hrs	0 days	Wed 3/3/21	Wed 3/3/21	
1475	2.3.3.1.1.	2	Complete Data Quality Report	25 hrs	5 days	Thu 3/4/21	Wed 3/10/21	Cemer
1476	2.3.3.1.1.	2	Complete Historical Load (If Applicable)	30 hrs	10 days	Thu 3/4/21	Wed 3/17/21	Cerner, DHHR
1477	2.3.3.1.1.	2	Submit & Gain Approval of Interface Control Document	100 hrs	15 days	Thu 3/4/21	Wed 3/24/21	Cemer, DHHR, IV&V
1478	2.3.3.1.1.	2	Pop Record Data Source #3	470 hrs	68 days	Von 12/21/2	(Wed 3/31/21	
1479	2.3.3.1.1.	.2	Identify Data Source Steward	5 hrs	1 day	vion 12/21/2	(vion 12/21/2	CDHHR
1480	2.3.3.1.1.	.2	Complete Data Discovery Documents	15 hr <b>s</b>	2 days	Tue 12/22/2	0Ned 12/23/2	(DHHR
1481	2.3.3.1.1.	.2	Submit Data Dictionary	5 hrs	2 days	Tue 12/22/2	0/Ved 12/23/2	CDHHR
1482	2.3.3.1.1.	.2	Determine Ongoing Load Timeline	5 hrs	2 days	Γue 12/22/2	0/Ved 12/23/2	(Cemer, DHHR
1483	2.3.3.1.1.	i.	Determine Historical Load Strategy (If Applicable)	5 hrs	2 days	Tue 12/22/20	Wed 12/23/20	Cemer, DHHR
	2.3.3.1.1		Request & Set Up System IDs (Instructions Provided by Cerner Integration Lead)		2 days	12/22/20	Wed 12/23/20	DHHR
	2.3.3.1.1		Create Source IDs	5 hrs		vlon 12/28/2		
1486	2.3.3.1.1	. 2	Create & Submit Sample	20 hrs	6 days	Ned 12/30/2		
1487	2.3.3.1.1	. <u>.</u>	Develop & Upload Vetted File	25 hr <b>s</b>	7 days	Fri 1/8/21	Tue 1/19/21	Cemer, DHHR

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
1488	2.3.3.1.1.2	Complete Data Integration Mappings	100 hrs	16 days	Wed 1/20/21	Wed 2/10/21	Cerner
1489	2.3.3.1.1.2	Data Mapping Review	20 hrs	5 days	Thu 2/11/21	Thu 2/18/21	Cemer, DHHR
1490	2.3.3.1.1.2	Complete PCST	75 hrs	9 days	Fri 2/19/21	Wed 3/3/21	Cemer
1491	2.3.3.1.1.2	*Reference Record Ready	0 hrs	0 days	Wed 3/3/21	Wed 3/3/21	
1492	2.3.3.1.1.2	Complete EMPI/MPM & Programs	30 hrs	5 days	Thu 3/4/21	Wed 3/10/21	Cerner
1493	2.3.3.1.1.2	*Internal Activation (Pop Record Ready)	0 hrs	0 days	Wed 3/10/21	Wed 3/10/21	
1494	2.3.3.1.1.2	Complete Data Quality Report	25 hrs	5 days	Thu 3/11/21	Wed 3/17/21	Cemer
1495	2.3.3.1.1.2	Complete Historical Load (If Applicable)	30 hrs	10 days	Thu 3/11/21	Wed 3/24/21	Cemer, DHHR
1496	2.3.3.1.1.2	Submit & Gain Approval of Interface Control Document	100 hrs	15 days	Thu 3/11/21	Wed 3/31/21	Cerner, DHHR, IV&V
1497	2.3.3.1.1.2	Pop Record Data Source #4	470 hrs	68 days	vion 12/21/20	Wed 3/31/21	
1498	2.3.3.1.1.2	Identify Data Source Steward	5 hrs	1 day	vion 12/21/20	Vion 12/21/20	DHHR
1499	2.3.3.1.1.2	Complete Data Discovery Documents	15 hrs	2 days	Γue 12/22/20	Ned 12/23/20	DHHR
1500	2.3.3.1.1.2	Submit Data Dictionary	5 hrs	2 days	Γue 12/22/20	Ned 12/23/20	DHHR
1501	2.3.3.1.1.2	<b>Determine Ongoing Load Timeline</b>	5 hrs	2 days	Γue 12/22/20	Ned 12/23/20	Cemer, DHHR
1502	2.3.3.1.1.2	Determine Historical Load Strategy (If Applicable)	5 hrs	2 days	Tue 12/22/20	Wed 12/23/20	Cerner, DHHR
1503	2.3.3.1.1.2	Request & Set Up System IDs (Instructions Provided by Cemer Integration Lead)	5 hrs	2 days	Tue 12/22/20	Wed 12/23/20	DHHR
w	2.3.3.1.1.2	Create Source IDs	5 hrs	2 days	vion 12/28/20	Tue 12/29/20	Cemer
51-a	2.3.3.1.1.2	Create & Submit Sample	20 hrs	6 days	Ned 12/30/20	Thu 1/7/21	DHHR
1506	2.3.3.1.1.2	Develop & Upload Vetted File	25 hrs	7 days	Fri 1/8/21	Tue 1/19/21	Cerner, DHHR
1507	2.3.3.1.1.2	Complete Data Integration Mappings	100 hrs	16 days	Wed 1/20/21	Wed 2/10/21	Cerner
1508	2.3.3.1.1.2	Data Mapping Review	20 hrs	5 days	Thu 2/11/21	Thu 2/18/21	Cemer, DHHR
1509	2.3.3.1.1.2	Complete PCST	75 hrs	9 days	Fri 2/19/21	Wed 3/3/21	Cemer
1510	2.3.3.1.1.2	*Reference Record Ready	0 hrs	0 days	Wed 3/3/21	Wed 3/3/21	
1511	2.3.3.1.1.2	Complete EMPI/MPM & Programs	30 hrs	5 days	Thu 3/4/21	Wed 3/10/21	Cemer
1512	2.3.3.1.1.2	*Internal Activation (Pop Record Ready)	0 hrs	0 days	Wed 3/10/21	Wed 3/10/21	
1513	2.3.3.1.1.2	Complete Data Quality Report	25 hrs	5 days	Thu 3/11/21	Wed 3/17/21	Cemer
1514	2.3.3.1.1.2	Complete Historical Load (If Applicable)	30 hrs	10 days	Thu 3/11/21	Wed 3/24/21	Cemer, DHHR
1515	2.3.3.1.1.2	Submit & Gain Approval of Interface Control Document	100 hrs	15 days	Thu 3/11/21		Cemer, DHHR, IV&V
	2.3.3.1.1.2	Pop Record Data Source #5	470 hrs	68 days	/lon 12/28/20	Mon 4/5/21	
1517	2.3.3.1.1.2	Identify Data Source Steward	5 hrs	1 day	vlon 12/28/20	vion 12/28/2(	DHHR
1518	2.3.3.1.1.2	Complete Data Discovery Documents	15 hrs	2 days	Tue 12/29/20	Ned 12/30/20	DHHR

)	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
1519	2.3.3.1.1.2	Submit Data Dictionary	5 hrs	2 days	Fue 12/29/20	Ned 12/30/20	DHHR
1520	2.3.3.1.1.2	Determine Ongoing Load Timeline	5 hrs	2 days	Tue 12/29/20	Ned 12/30/20	Cerner, DHHR
1521	2.3.3.1.1.2	Determine Historical Load Strategy (If Applicable)	5 hrs	2 days	Tue 12/29/20	Wed 12/30/20	Cerner, DHHR
1522	2.3.3.1.1.2	Request & Set Up System IDs (Instructions Provided by Cemer Integration Lead)	5 hrs	2 days	Tue 12/29/20	Wed 12/30/20	DHHR
1523	2.3.3.1.1.2	Create Source IDs	5 hrs	2 days	Γhu 12/31/20	Mon 1/4/21	Cemer
1524	2.3.3.1.1.2	Create & Submit Sample	20 hrs	6 days	Tue 1/5/21	Tue 1/12/21	DHHR
1525	2.3.3.1.1.2	Develop & Upload Vetted File	25 hrs	7 days	Wed 1/13/21	Fn 1/22/21	Cerner, DHHR
1526	2.3.3.1.1.2	Complete Data Integration Mappings	100 hrs	16 days	Mon 1/25/21	Tue 2/16/21	Cemer
1527	2.3.3.1.1.2	Data Mapping Review	20 hrs	5 days	Wed 2/17/21	Tue 2/23/21	Cemer, DHHR
1528	2.3.3.1.1.2	Complete PCST	75 hrs	9 days	Wed 2/24/21	Mon 3/8/21	Cemer
1529	2.3.3.1.1.2	*Reference Record Ready	0 hrs	0 days	Mon 3/8/21	Mon 3/8/21	
1530	2.3.3.1.1.2	Complete EMPI/MPM & Programs	30 hrs	5 days	Tue 3/9/21	Mon 3/15/21	Cemer
1531	2.3.3.1.1.2	*Internal Activation (Pop Record Ready)	0 hrs	0 days	Mon 3/15/21	Mon 3/15/21	
1532	2.3.3.1.1.2	Complete Data Quality Report	25 hrs	5 days	Tue 3/16/21	Mon 3/22/21	Cemer
1533	2.3.3.1.1.2	Complete Historical Load (If Applicable)	30 hrs	10 days	Tue 3/16/21	Mon 3/29/21	Cemer, DHHR
1534	2.3.3.1.1.2	Submit & Gain Approval of Interface Control Document	100 hrs	15 days	Tue 3/16/21	Mon 4/5/21	Cemer, DHHR, IV&V
1535	2.3.3.1.2	Configure Solutions	14,125 hrs	80 days	Mon 12/14/20	Fri 4/9/21	
1536	2.3.3.1.2.	HealtheEDW	8,125 hrs	80 days	vion 12/14/20	Fri 4/9/21	
1537	2.3.3.1.2.	Analytics Reporting & Content Packages (5)	2,250 hrs	66 days	√lon 12/14/20	Mon 3/22/21	
1538	2.3.3.1.2.	Package #1: TBD	450 hrs	35 days	Vion 12/14/20	Thu 2/4/21	
1539	2.3.3.1.2.	Build Data Sets & Data Models	200 hrs	10 days	Vion 12/14/20	Tue 12/29/20	Cemer
1540	2.3.3.1.2.	Configure Reports	150 hrs	10 days	/Ved 12/30/20	Wed 1/13/21	Cemer
1541	2.3.3.1.2.	Submit & Gain Approval of Report Specification	s 100 hrs	15 days	Thu 1/14/21	Thu 2/4/21	Cemer, DHHR
1542	2.3.3.1.2.	Package #2: TBD	450 hrs	35 days	√lon 12/21/20	Thu 2/11/21	
1543	2.3.3.1.2.	Build Data Sets & Data Models	200 hrs	10 days	vion 12/21/20	Wed 1/6/21	Cerner
1544	2.3.3.1.2.	Configure Reports	150 hrs	10 days	Thu 1/7/21	Thu 1/21/21	Cerner
1545	2.3.3.1.2.	Submit & Gain Approval of Report Specification	s 100 hrs	15 days	Fri 1/22/21	Thu 2/11/21	Cemer, DHHR
1546	2.3.3.1.2.	Package #3: TBD	450 hrs	35 days	Mon 1/4/21	Tue 2/23/21	
1547	2.3.3.1.2.	Build Data Sets & Data Models	200 hrs	10 days	Mon 1/4/21	Fri 1/15/21	Cemer
1548	2.3.3.1.2.	Configure Reports	150 hrs	10 days	Tue 1/19/21	Mon 2/1/21	Cerner

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
1549	2.3.3.1.2.1	Submit & Gain Approval of Report Specifications	100 hrs	15 days	Tue 2/2/21	Tue 2/23/21	Cemer, DHHR
1550	2.3.3.1.2.1	Package #4: TBD	450 hrs	35 days	Tue 1/19/21	Tue 3/9/21	
1551	2.3.3.1.2.1	Build Data Sets & Data Models	200 hrs		Tue 1/19/21		Cemer
1552	2.3.3.1.2.1	Configure Reports	150 hrs	10 days	Tue 2/2/21	Tue 2/16/21	Cerner
1553	2.3.3.1.2.1	Submit & Gain Approval of Report Specifications	100 hrs	15 days	Wed 2/17/21	Tue 3/9/21	Cemer, DHHR
1554	2.3.3.1.2.1	Package #5: TBD	450 hrs	35 days	Mon 2/1/21	Mon 3/22/21	
1555	2.3.3.1.2.1	Build Data Sets & Data Models	200 hrs	10 days	Mon 2/1/21	Fri 2/12/21	Cerner
1556	2.3.3.1.2.1	Configure Reports	150 hrs	10 days	Tue 2/16/21	Mon 3/1/21	Cemer
1557	2.3.3.1.2.1	Submit & Gain Approval of Report Specifications	100 hrs	15 days	Tue 3/2/21	Mon 3/22/21	Cemer, DHHR
1558	2.3.3.1.2.1	Ad-Hoc Data Models (5)	875 hrs	77 days	vion 12/14/20	Tue 4/6/21	
1559	2.3.3.1.2.1	Ad-Hoc Data Model #11: TBD	175 hrs	39 days	vion 12/14/20	Wed 2/10/21	
1560	2.3.3.1.2.1	Configure Data Model	75 hrs	24 days	vion 12/14/20	Wed 1/20/21	Cemer
1561	2.3.3.1.2.1	Submit and Gain Approval of Data Model Specifications	100 hrs	15 days	Thu 1/21/21	Wed 2/10/21	Cemer, DHHR
1562	2.3.3.1.2.1	Ad-Hoc Data Model #12: TBD	175 hrs	39 days	Vion 12/14/20	Wed 2/10/21	
1563	2.3.3.1.2.1	Configure Data Model	75 hrs	24 days	Vion 12/14/20	Wed 1/20/21	Cemer
1564	2.3.3.1.2.1	Submit and Gain Approval of Data Model Specifications	100 hrs	15 days	Thu 1/21/21	Wed 2/10/21	Cerner, DHHR
1565	2.3.3.1.2.1	Ad-Hoc Data Model #13: TBD	175 hrs	39 days	Thu 2/4/21	Wed 3/31/21	
1566	2.3.3.1.2.1	Configure Data Model	75 hrs	24 days	Thu 2/4/21	Wed 3/10/21	Cemer
1567	2.3.3.1.2.1	Submit and Gain Approval of Data Model Specifications	100 hrs	15 days	Thu 3/11/21	Wed 3/31/21	Cemer, DHHR
1568	2.3.3.1.2.1	Ad-Hoc Data Model #14: TBD	175 hrs	39 days	Mon 2/8/21	Fri 4/2/21	
1569	2.3.3.1.2.1	Configure Data Model	75 hrs	24 days	Mon 2/8/21	Fri 3/12/21	Cemer
1570	2.3.3.1.2.1	Submit and Gain Approval of Data Model Specifications	100 hrs	15 days	Mon 3/15/21	Fri 4/2/21	Cemer, DHHR
1571	2.3.3.1.2.1	Ad-Hoc Data Model #15: TBD	175 hrs	39 days	Wed 2/10/21	Tue 4/6/21	
1572	2.3.3.1.2.1	Configure Data Model	75 hrs	24 days	Wed 2/10/21	Tue 3/16/21	Cemer
1573	2.3.3.1.2.1	Submit and Gain Approval of Data Model Specifications	100 hrs	15 days	Wed 3/17/21	Tue 4/6/21	Cemer, DHHR
1574	2.3.3.1.2.1	Federal Reports (2)	5,000 hrs	80 days	vion 12/14/20	Fri 4/9/21	
	2.3.3.1.2.1	CMS-64	3,000 hrs	75 days	vion 12/14/20	Fri 4/2/21	
1576	2.3.3.1.2.1	Build Data Sets & Data Models	1,500 hrs	25 days	vion 12/14/20	Thu 1/21/21	Cemer
1577	2.3.3.1.2.1	Configure Reports	1,000 hrs	25 days	Fri 1/22/21	Fri 2/26/21	Cemer

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
1578	2.3.3.1.2.1	Submit & Gain Approval of Report Specifications	500 hrs	25 days	Mon 3/1/21	Fri 4/2/21	Cemer, DHHR
1579	2.3.3.1.2.1	CMS-21	2,000 hrs	75 days	Ann 40/04/06	F= 4/0/04	
1580	2.3.3.1.2.1	Build Data Sets & Data Models	1,000 hrs		Vion 12/21/20		
1581	2.3.3.1.2.1		800 hrs		Vion 12/21/20		
1582	2.3.3.1.2.1	Submit & Gain Approval of Report Specifications			Fri 1/29/21 Mon 3/8/21	Fri 3/5/21 Fri 4/9/21	Cemer, DHHR
1583	2.3.3.1.2.2	TMSIS Reporting	5.0001				, <b>-</b> ,
	2.3.3.1.2.2		5,000 hrs		vion 12/14/20		
	2.3.3.1.2.3	Healthe Data Lab	5,000 hrs	80 days	vion 12/14/20	Fri 4/9/21	
	2.3.3.1.2.3		1,000 hrs		vion 12/14/20		
******************************	2.3.3.1.2.3	Data Science Analysis	1,000 hrs		vion 12/14/20		
12.81 7/10		DSaaS/TBD	1,000 hrs	80 days	Vion 12/14/2(	Fri 4/9/21	Cemer
	2.3.3.1.3	Set Up IdM and User Access Security	500 hrs	80 days	Mon 12/14/2(	Fri 4/9/21	
a read that I for sets	1.2.1.3.1.5	Authentication	250 hrs	80 days	vion 12/14/20	Fri 4/9/21	
20 0 2 2 2 2	1.2.1.3.1.3	Configure User Name & Password Credentials	250 hrs	80 days	√lon 12/14/2(	Fri 4/9/21	Cemer, DHHR
	1.2.1.3.1.3	Authorization	250 hrs	80 days	Mon 12/14/20	Fri 4/9/21	
	1.2.1.3.1.8	Configure Permissions	250 hrs	80 days	Vion 12/14/20	Fri 4/9/21	Cemer, DHHR
w . '- 2: m	2.3.3.2	Deliverable Management	480 hrs	47 days	Mon 2/1/21		
1594	2.3.3.2.1	D034 Data Conversion Test Cases	120 hrs		Mon 2/1/21		
1595	2.3.3.2.1.1	Deliverable Walkthrough	20 hrs				Cerner, DHHR, IV
1596	2.3.3.2.1.2	Cemer PMO Submit to DHHR for Review	50 hrs	1 day	Thu 2/4/21		
1597	2.3.3.2.1.3	DHHR Review and Provide Comments	25 hrs	7 days			DHHR, IV&V
1598	2.3.3.2.1.4	Cemer Revisions (As Necessary)	15 hrs		Wed 2/17/21		
1599	2.3.3.2.1.8	DHHR Review and Approval	10 hrs		Wed 2/24/21		
1600	2.3.3.2.2	D035 Data Conversion Test Results	120 hrs		Thu 3/4/21		
1601	2.3.3.2.2.1	Deliverable Walkthrough	20 hrs	3 days			Cerner, DHHR, IV&
1602	2.3.3.2.2.2	Cemer PMO Submit to DHHR for Review	50 hrs	1 day	Tue 3/9/21		
1603	2.3.3.2.2.3	DHHR Review and Provide Comments	25 hrs		Wed 3/10/21		
604	2.3.3.2.2.4	Cemer Revisions (As Necessary)	15 hrs	5 days			
605	2.3.3.2.2.5	DHHR Review and Approval	10 hrs	2 days			
1606	2.3.3.2.3	D036 Database Design Document and Data Models	120 hrs	-	Fri 3/26/21		UNITE, IV&V
1607	2.3.3.2.3.1	Deliverable Walkthrough	20 hrs		Mon 3/15/21		C
	2.3.3.2.3.2	Cerner PMO Submit to DHHR for Review	50 hrs				Cemer, DHHR, IV8
	2.3.3.2.3.3	DHHR Review and Provide Comments			Thu 3/18/21		
		DITITION AND FIDNICE COMMENTS	25 hrs	7 days	Fri 3/19/21	Mon 3/29/21	DHHR, IV&V

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
1610	2.3.3.2.3.4	Cemer Revisions (As Necessary)	15 hrs	5 days	Tue 3/30/21	Mon 4/5/21	Cemer
1611	2.3.3.2.3.5	DHHR Review and Approval	10 hrs	2 days	Tue 4/6/21	Wed 4/7/21	DHHR, IV&V
1612	2.3.3.2.4	Data Load Schedule	120 hrs	18 days	Mon 2/15/21	Wed 3/10/21	
1613	2.3.3.2.4.1	Deliverable Walkthrough	20 hrs	3 days	Mon 2/15/21	Wed 2/17/21	Cemer, DHHR, IV&
1614	2.3.3.2.4.2	Cerner PMO Submit to DHHR for Review	50 hrs	1 day	Thu 2/18/21	Thu 2/18/21	Cemer
1615	2.3.3.2.4.3	DHHR Review and Provide Comments	25 hrs	7 days	Fri 2/19/21	Mon 3/1/21	DHHR, IV&V
1616	2.3.3.2.4.4	Cerner Revisions (As Necessary)	15 hrs	5 days	Tue 3/2/21	Mon 3/8/21	Cemer
1617	2.3.3.2.4.5	DHHR Review and Approval	10 hrs	2 days	Tue 3/9/21	Wed 3/10/21	DHHR, IV&V
161 <b>8</b>	2.3.3.3	Payment Milestone #20: Solution Design, Testing and Operations 1 Complete	0 hrs	0 days	Fri 4/9/21	Fri 4/9/21	
1619	2.3.4	Solution Design, Testing and Operations 2 (Cemer Testing)	10,810 hrs	·	Mon 4/12/21		
1620	2.3.4.1	Prepare for Testing	3,050 hrs	20 days	Mon 4/12/21	Fri 5/7/21	
1621	2.3.4.1.1	Review Project Team Capacity, Assign Test Case and Attestation Writing	50 hrs	5 days	Mon 4/12/21	Fri 4/16/21	Cerner
1622	2.3.4.1.2	Write Test Cases and Post Drafts for Review, Revision and Approval	2,500 hrs	20 days	Mon 4/12/21	Fri 5/7/21	Cemer, DHHR, IV&V
1623	2.3.4.1.3	Finalize Test Cases in Testing Tools	500 hrs	5 days	Mon 5/3/21	Fri 5/7/21	Cerner
1624	2.3.4.2	Cemer Testing	6,440 hrs	58 days	Mon 4/12/21	Fri 7/2/21	
162 <b>5</b>	2.3.4.2.1	Execute Test Cases to Completion and Resolve Defects	4,000 hrs	20 days	Mon 5/10/21	Tue 6/8/21	Cemer
162 <b>6</b>	2.3.4.2.2	Submit Testing Status Reports (Weekly)	250 hrs	20 days	Mon 5/10/21	Tue 6/8/21	Cemer
1627	2.3.4.2.3	TMSIS Testing	2,190 hrs	58 days	Mon 4/12/21	Fri 7/2/21	
1628	2.3.4.2.3.	1 Testing 1 - System	775 hrs	20 days	Mon 4/12/21	Fri 5/7/21	
1629	2.3.4.2.3.	Load Production Files to Validation Tenant	50 hrs	5 days	Mon 4/12/21	Fri 4/16/21	Cemer
1630	2.3.4.2.3.	Generate 1st Set of Output Files (xx/xxxx) Reporting Period)	50 hrs	5 days	Mon 4/19/21	Fri 4/23/21	Cemer
1631	2.3.4.2.3.	1 Load Output Files to Validation Tenant	25 hrs	1 day	Mon 4/26/21	Mon 4/26/21	Cemer
1632	2.3.4.2.3.	File Content Comparison between Cemer test files and production files	100 hrs	3 days	Tue 4/27/21	Thu 4/29/21	Cemer
163 <b>3</b>	2.3.4.2.3.	1 Review and Resolve Defects	500 hrs	5 days	Fri 4/30/21	Thu 5/6/21	Cemer
1634	2.3.4.2.3.	1 Share System Test Summary Results (Submission Only)	50 hrs	1 day	Fri 5/7/21	Fri 5/7/21	Cerner, DHHR, IV&V
163 <b>5</b>	2.3.4.2.3.	Z Testing 2 - Integration	1,315 hrs	30 days	Mon 5/10/21	Tue 6/22/21	
1636	2.3.4.2.3.	Submit Header Files & Receive Ack Reports	25 hrs	2 days	Mon 5/10/21	Tue 5/11/21	Cemer
1637	2.3.4.2.3.	Submit Full Files & Receive Ack Reports	25 hrs	2 days	Thu 5/13/21	Fri 5/14/21	Cerner
1638	2.3.4.2.3.	2 Request and Receive ERR Reports	15 hrs	1 day	Mon 5/17/21	Mon 5/17/21	l Cerner
1639	2.3.4.2.3.	2 Review and Resolve Rejected Records	1,000 hrs	15 days	Tue 5/18/21	Tue 6/8/21	Cemer

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
1640	2.3.4.2.3.2	Re-Submit Header Files & Receive Ack Reports (As Needed)	25 hrs	10 days	Mon 5/10/21	Mon 5/24/2	Cemer
1641	2.3.4.2.3.2	/	25 hrs	10 days	Mon 5/10/21	Mon 5/24/2	l Cemer
1642	2.3.4.2.3.2		100 hrs	5 days	Wed 6/9/21	Tue 6/15/21	Cemer, DHHR,
1643	2.3.4.2.3.2	Submit Issue Tracking Report and Meet with DHHR to review	100 hrs	5 days	Wed 6/16/21	Tue 6/22/21	Cerner, DHHR,
1644	2.3.4.2.3.3	Testing 3 - Parallel Testing	100 hrs	8 davs	Wed 6/23/21	Fri 7/2/21	IV&V
1645	2.3.4.2.3.3	Load Production ERR to Validation Tenant	15 hrs	1 day	Wed 6/23/21		
1646	2.3.4.2.3.3	Compare ERRs	85 hrs		Thu 6/24/21	,	
1647	2.3.4.3	Deliverable Management	1,320 hrs		Thu 4/15/21		
1648	2.3.4.3.1	D040 Interface Inventory	120 hrs		Mon 5/3/21		
1649	2.3.4.3.1.1	Deliverable Walkthrough	20 hrs	3 days			
1650	2.3.4.3.1.2	Cerner PMO Submit to DHHR for Review	50 hrs	1 day			Cemer, DHHR, IV
1651	2.3.4.3.1.3	DHHR Review and Provide Comments	25 hrs	7 days		Thu 5/6/21	
1652	2.3.4.3.1.4	Cerner Revisions (As Necessary)	15 hrs				DHHR, IV&V
1653	2.3.4.3.1.5	DHHR Review and Approval	10 hrs		Wed 5/19/21		
1654	2.3.4.3.2	D041 Load and Stress Test Cases	270 hrs		Wed 5/26/21		
1655	2.3.4.3.2.1	Deliverable Walkthrough	20 hrs		Thu 4/15/21		
1656	2.3.4.3.2.2	Cerner PMO Submit to DHHR for Review	200 hrs				Cemer, DHHR, IV
1657	2.3.4.3.2.3	DHHR Review and Provide Comments	25 hrs		Tue 4/20/21		
1658	2.3.4.3.2.4	Cerner Revisions (As Necessary)	15 hrs		Wed 4/21/21		
1659	2.3.4.3.2.5	DHHR Review and Approval	10 hrs	5 days		Thu 5/6/21	
1660	2.3.4.3.3	D042 Load and Stress Test Results	270 hrs	2 days			DHHR, IV&V
1661	2.3.4.3.3.1	Deliverable Walkthrough	270 hrs	18 days			_
662	2.3.4.3.3.2	Cemer PMO Submit to DHHR for Review	200 hrs	3 days			Cemer, DHHR, IV
1663	2.3.4.3.3.3	DHHR Review and Provide Comments	25 hrs		Mon 6/14/21		
1664	2.3.4.3.3, <b>∠</b>	Cemer Revisions (As Necessary)	25 ms		Tue 6/15/21		
665	2.3.4.3.3.8	DHHR Review and Approval	10 hrs		Thu 6/24/21		
666	2.3.4.3.4	D043 Operational Readiness Plan			Thu 7/1/21		DHHR, IV&V
667	2.3.4.3.4.1	Deliverable Walkthrough	120 hrs 20 hrs		Mon 5/10/21		_
	2.3.4.3.4.2	Cemer PMO Submit to DHHR for Review					Cemer, DHHR, IV8
	2.3.4.3.4.3	DHHR Review and Provide Comments	50 hrs		Fri 5/14/21		
	2.3.4.3.4.4	Cerner Revisions (As Necessary)	25 hrs		Mon 5/17/21		
		Comer nevialons (na Necessary)	15 hrs	5 days	Wed 5/26/21	Wed 6/2/21	Cemer

D	WBS	Task Name	Work	Duration	Start	Finish Ì	Task Ow ner
1671	2.3.4.3.4.5	DHHR Review and Approval	10 hrs	2 days	Thu 6/3/21	Fri 6/4/21	DHHR, IV&V
	2.3.4.3.5	D044 Operational Readiness Test Scripts	270 hrs	18 days	Thu 4/15/21	Mon 5/10/21	ļ
NAMES OF THE PARTY OF THE PARTY.	2.3.4.3.5.1	Deliverable Walkthrough	20 hrs	3 days	Thu 4/15/21	Mon 4/19/21	Cemer, DHHR, IV&
	2.3.4.3.5.2		200 hrs	1 day	Tue 4/20/21	Tue 4/20/21	Cemer
	2.3.4.3.5.3		25 hrs	7 days	Wed 4/21/21	Thu 4/29/21	DHHR, IV&V
2 2 4 Temporaries	2.3.4.3.5.4	-	15 hrs	5 days	Fri 4/30/21	Thu 5/6/21	Cerner
	2.3.4.3.5.		10 hrs	2 days	Fri 5/7/21	Mon 5/10/21	DHHR, IV&V
	2.3.4.3.6	D045 Operational Readiness Test Results	270 hrs	18 days	Wed 6/9/21	Fri 7/2/21	
. 18 d thee	2.3.4.3.6.	Deliverable Walkthrough	20 hrs	3 days	Wed 6/9/21	Fri 6/11/21	Cemer, DHHR, IV&
	2.3.4.3.6.2		200 hrs	1 day	Mon 6/14/21	Mon 6/14/21	Cemer
	2.3.4.3.6.		25 hrs	7 days	Tue 6/15/21	Wed 6/23/21	DHHR, IV&V
5	2.3.4.3.6.4		15 hrs	5 days	Thu 6/24/21	Wed 6/30/21	Cemer
	2.3.4.3.6.		10 hrs	2 days	Thu 7/1/21	Fri 7/2/21	DHHR, IV&V
	2.3.4.4	Payment Milestone #21: Solution Design, Testing and Operations 2 Complete	0 hrs	0 days	Fri 7/2/21	Fri 7/2/21	
1685	2.3.5	Solution Design, Testing and Operations 3 (DHHR Testing/UAT)	8,450 hrs	38 days	Mon 7/5/21	Wed 8/25/21	
1686	2.3.5.1	DHHR Testing	3,000 hrs	35 days	Mon 7/5/21	Fri 8/20/21	
1687	2.3.5.1.1	User Acceptance Testing (UAT)	3,000 hrs	35 days	Mon 7/5/21	Fri 8/20/21	Cerner, DHHR
1688	2.3.5.2	TMSIS Testing (Continued)	2,220 hrs	35 days	Mon 7/5/21	Fri 8/20/21	
4 W/ July 700	2.3.5.2.1	Testing 3 - Parallel Testing	2,100 hrs	30 days	Mon 7/5/21	Fri 8/13/21	
1690	2.3.5.2.1.	1 Review and Resolve Defects	2,000 hrs	30 days	Mon 7/5/21	Fri 8/13/21	
1691	2.3.5.2.1.	2 Re-Submit Header Files & Receive Ack Reports (As Needed)	50 hrs	30 days	Mon 7/5/21	Fri 8/13/21	
1692	2.3.5.2.1.	Re-Submit Full Files & Receive Ack Reports (As Needed)	50 hrs	30 days	Mon 7/5/21	Fri 8/13/21	
1693	2.3.5.2.2	Testing 4 - Final Documentation Updates & Submissions	120 hrs	,	Mon 8/16/2		
1694	2.3.5.2.2.	1 Source-to-Target Mappings	80 hrs			1 Thu 8/19/2	
1695	2.3.5.2.2.	.1 Cemer Update and Submit to DHHR for Review and Approval	70 hrs			1 Tue 8/17/21	
1696	2.3.5.2.2	1 DHHR Submit to CMS	10 hrs	2 days	Wed 8/18/2	1 Thu 8/19/2	
1697	2.3.5.2.2	2 Appendix A	25 hrs	1 day		1 Thu 8/19/2	
1698	2.3.5.2.2	.2 Cerner Update and Submit to DHHR	25 h <b>rs</b>	1 day		1 Thu 8/19/2	
1699	2.3.5.2.2	Cemer Submit Final Files to CMS	15 hrs	1 day		Fri 8/20/21	
41.71	2.3.5.3	Complete Attestation Documents (Per Applicable Requirement)	1,500 hrs	35 days	Mon 7/5/21	Fri 8/20/21	Cemer, DHHR, IV&V

ID	WBS J	Task Name	Work	Duration	Start	Finish	Task Ow ner
1701	2.3.5.4	Deliverable Management	1,730 hrs	30 days	7/5/04		<u> </u>
1702	2.3.5.4.1	D046 Regression Test Cases	220 hrs	38 days		Wed 8/25/21	
1703	2.3.5.4.1.1		220 fils	18 days		Wed 7/28/21	
1704	2.3.5.4.1.2	_		3 days			Cerner, DHHR, iV8
1705	2.3.5.4.1.3		150 hrs	1 day		Thu 7/8/21	
1706	2.3.5.4.1.4		25 hrs	7 days		Mon 7/19/21	
1707	2.3.5.4.1.5		15 hrs			Mon 7/26/21	
1708	2.3.5.4.2	D047 Regression Test Results	10 hrs			Wed 7/28/21	DHHR, IV&V
1709	2.3.5.4.2.1		220 hrs			Wed 8/25/21	
· = 1 = 1.4*	2.3.5.4.2.2	- Tollable Walkillougil	20 hrs	3 days			Cemer, DHHR, IV8
	2.3.5.4.2.3	THE CANAL TO DISTRICT OF INCHES	150 hrs	1 day		Thu 8/5/21	
	2.3.5.4.2.4	STREET TO VICE AND LIOUNGE COMMISSION	25 hrs	7 days		Mon 8/16/21	
**:	2.3.5.4.2.5	( to resociation)	15 hrs	5 days	Tue 8/17/21	Mon 8/23/21	Cemer
VIII 24 -5-42	2.3.5.4.3	- Thirt to Hotel and Apployal	10 hrs	2 days	Tue 8/24/21	Wed 8/25/21	DHHR, IV&V
-	2.3.5.4.3.1	D048 Reports and Forms Inventory	120 hrs	18 days	Thu 7/15/21	Mon 8/9/21	
		Donitolable Hankingugii	20 hrs	3 days	Thu 7/15/21	Mon 7/19/21	Cemer, DHHR, IV8
	2.3.5.4.3.2	Source : MIO CODITITE TO DITITE TO REVIEW	50 hrs			Tue 7/20/21	
	2.3.5.4.3.3	- Histories and Floride Comments	25 hrs	7 days	Wed 7/21/21	Thu 7/29/21	DHHR, IV&V
	2.3.5.4.3.4		15 hrs	5 days		Thu 8/5/21	
N. S. S. S. V. Com. Language	2.3.5.4.3.5	Brank Neview and Approval	10 hrs	2 days		Mon 8/9/21	
. n	2.3.5.4.4	D049 System Integration Plan	120 hrs	18 days		Tue 8/10/21	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
-	2.3.5.4.4.1	Deliverable Walkthrough	20 hrs	3 days			Cerner, DHHR, IV&
	2.3.5.4.4.2	Cerner PMO Submit to DHHR for Review	50 hrs	1 day		Wed 7/21/21	
1723	2.3.5.4.4.3	DHHR Review and Provide Comments	25 hrs			Fri 7/30/21	
1724	2.3.5.4.4.4	Cemer Revisions (As Necessary)	15 hrs	5 days		Fri 8/6/21	
1725	2.3.5.4.4.5	DHHR Review and Approval	10 hrs	2 days		Tue 8/10/21	
1726	2.3.5.4.5	D050 System Integration Test Cases	220 hrs	18 days		Wed 7/28/21	Dillit, IVQV
1727	2.3.5.4.5.1	Deliverable Walkthrough	20 hrs				Cemer, DHHR, IV&
1728	2.3.5.4.5.2	Cemer PMO Submit to DHHR for Review	150 hrs	1 day		Thu 7/8/21	
1729	2.3.5.4.5.3	DHHR Review and Provide Comments	25 hrs	7 days			
1730	2.3.5.4.5.4	Cemer Revisions (As Necessary)	15 hrs			Mon 7/19/21   Mon 7/26/21 (	
1731	2.3.5.4.5.5	DHHR Review and Approval	10 hrs				
1732	2.3.5.4.6	D051 System Integration Test Results	220 hrs			Wed 7/28/21	JHHK, IV&V
1733	2.3.5.4.6.1	Deliverable Walkthrough	20 hrs		Mon 8/2/21		Cemer, DHHR, IV&\

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
1734	2.3.5.4.6.2	Cerner PMO Submit to DHHR for Review	150 hrs	1 day	Thu 8/5/21	Thu 8/5/21	Cemer
	į 2.3.5.4.6.3		25 hrs	7 days	Fri 8/6/21	Mon 8/16/21	DHHR, IV&V
1736	2.3.5.4.6.4	Cemer Revisions (As Necessary)	15 hrs	5 days	Tue 8/17/21	Mon 8/23/21	Cerner
1737	2.3.5.4.6.	DHHR Review and Approval	10 hrs	2 days	Tue 8/24/21	Wed 8/25/21	DHHR, IV&V
	2.3.5.4.7	D052 Training Management Plan	120 hrs	18 days	Mon 7/19/21	Wed 8/11/21	
	! 2.3.5.4.7.	Deliverable Walkthrough	20 hrs	3 days	Mon 7/19/21	Wed 7/21/21	Cemer, DHHR, IV&
1740	2.3.5.4.7.	Cemer PMO Submit to DHHR for Review	50 hrs	1 day	Thu 7/22/21	Thu 7/22/21	Cemer
	2.3.5.4.7.		25 hrs	7 days	Fri 7/23/21	Mon 8/2/21	DHHR, IV&V
	2.3.5.4.7.		15 hrs	5 days	Tue 8/3/21	Mon 8/9/21	Cemer
1743	2.3.5.4.7.	DHHR Review and Approval	10 hrs	2 days	Tue 8/10/21	Wed 8/11/21	DHHR, IV&V
1111 V V V V	2.3.5.4.8	D053 User Acceptance Test Cases	270 hrs	18 days	Mon 7/5/21	Wed 7/28/21	
SE SECRETARIA	2.3.5.4.8.	Deliverable Walkthrough	20 hrs	3 days	Mon 7/5/21	Wed 7/7/21	Cemer, DHHR, IV&\
THE REAL PROPERTY.	2.3.5.4.8.	DATE OF THE PURISH DESIGNATION	200 hrs	1 day	Thu 7/8/21	Thu 7/8/21	Cerner
	2.3.5.4.8.		25 hrs	7 days	Fri 7/9/21	Mon 7/19/21	DHHR, IV&V
سوه کا با سود	2.3.5.4.8.		15 hrs	5 days	Tue 7/20/21	Mon 7/26/21	Cerner
	2.3.5.4.8.		10 hrs	2 days	Tue 7/27/21	Wed 7/28/21	DHHR, IV&V
5 4 - 1	2.3.5.4.9	D054 User Acceptance Test Results and Letter	220 hrs	18 days	Mon 8/2/21	Wed 8/25/21	
7:\	2.3.5.4.9.		20 hrs	3 days	Mon 8/2/21	Wed 8/4/21	Cemer, DHHR, IV&
	2.3.5.4.9.	DIAGO I LIA DIND for Design	150 hrs	1 day	Thu 8/5/21	Thu 8/5/21	Cemer
	2.3.5.4.9.	· · · · · · · · · · · · · · · · · · ·	25 hrs	7 days	Fri 8/6/21	Mon 8/16/21	DHHR, IV&V
	2.3.5.4.9.		15 hrs	5 days	Tue 8/17/21	Mon 8/23/21	1 Cemer
	2.3.5.4.9		10 hrs	2 days	Tue 8/24/21	Wed 8/25/2	DHHR, IV&V
290 A	2.3.5.5	Payment Milestone #22: Solution Design, Testing and Operations 3 Complete	0 hrs		Wed 8/25/2		
1757	2.3.6	Solution Deployment 1 (Prepare for Cutover)	1,130 hrs	_	Mon 8/23/2		
1758	2.3.6.1	TMSIS Testing (Continued)	250 hrs		Mon 8/23/2		
1759	2.3.6.1.1	Testing 5 - CMS Data Quality Review	250 hrs		Mon 8/23/2		
1760	2.3.6.1.1	1 CMS Review Segment Counts	50 hrs	4 days	Mon 8/23/2		
1761	2.3.6.1.1	2 CMS Prepare and Send Preliminary Report	25 hrs	5 days	Fri 8/27/21	Thu 9/2/21	1760
1762	2.3.6.1.1	Cerner Reviews and Completes Preliminary Report	150 hrs	3 days	Fri 9/3/21		
- 1 m '4 -	2.3.6.1.1		25 hrs	2 days		Fri 9/10/21	
1764	2.3.6.2	Deliverable Management	880 hrs		Mon 8/23/2		
	2.3.6.2.1	D055 Cutover Play Book	270 hrs	18 days	Mon 8/23/2	1 Thu 9/16/2	1

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Owner
1766	2.3.6.2.1.1	Deliverable Walkthrough	20 hrs	3 days	Man 9/22/24	W6-1-0405/04	
1767	2.3.6.2.1.2		200 hrs				Cemer, DHHR, IV&
1768	2.3.6.2.1.3		25 hrs	1 day	Thu 8/26/21		
1769	2.3.6.2.1.4		25 ms	7 days			DHHR, IV&V
1770	2.3.6.2.1.5		10 hrs		Wed 9/8/21		
1771	2.3.6.2.2	D056 Federal Review Supporting Documentation	270 hrs		Wed 9/15/21		
1772	2.3.6.2.2.1	Deliverable Walkthrough	20 hrs		Mon 8/23/21		
1773	2.3.6.2.2.2	Cemer PMO Submit to DHHR for Review	200 hrs				Cemer, DHHR, IV&
1774	2.3.6.2.2.3	DHHR Review and Provide Comments			Thu 8/26/21		
1775	2.3.6.2.2.4	Cemer Revisions (As Necessary)	25 hrs		Fri 8/27/21		
1776	2.3.6.2.2.5	DHHR Review and Approval	15 hrs		Wed 9/8/21		
1777	2.3.6.2.3	D057 Rollout Plan	10 hrs		Wed 9/15/21		DHHR, IV&V
the state of the s	2.3.6.2.3.1	Deliverable Walkthrough	220 hrs		Tue 8/24/21		
	2.3.6.2.3.2	Cemer PMO Submit to DHHR for Review	20 hrs	3 days	Tue 8/24/21	Thu 8/26/21	Cemer, DHHR, IV&
	2.3.6.2.3.3		150 hrs	1 day		Fri 8/27/21	
	2.3.6.2.3.4	DHHR Review and Provide Comments	25 hrs	7 days	Mon 8/30/21	Wed 9/8/21	DHHR, IV&V
119 Sec. 1 144	2.3.6.2.3.5	Cemer Revisions (As Necessary)	15 hrs	5 days	Thu 9/9/21	Wed 9/15/21	Cerner
- 12 / There are	2.3.6.2.4	DHHR Review and Approval	10 hrs	2 days	Thu 9/16/21	Fri 9/17/21	DHHR, IV&V
	2.3.6.2.4.1	D058 Implementation Certification Letter	120 hrs	18 days	Tue 8/24/21	Fri 9/17/21	
	2.3.6.2.4.2	Deliverable Walkthrough	20 hrs	3 days	Tue 8/24/21	Thu 8/26/21	Cerner, DHHR, IV&
		Cemer PMO Submit to DHHR for Review	50 hrs	1 day	Fri 8/27/21	Fri 8/27/21	Cemer
The Atlanton commercy is need	2.3.6.2.4.3	DHHR Review and Provide Comments	25 hrs	7 days	Mon 8/30/21	Wed 9/8/21	DHHR, IV&V
	2.3.6.2.4.4	Cerner Revisions (As Necessary)	15 hrs		Thu 9/9/21		
HEAT IN THE	2.3.6.2.4.5	DHHR Review and Approval	10 hrs	2 days	Thu 9/16/21	Fri 9/17/21	DHHR, IV&V
	2.3.6.3	Payment Milestone #23: Solution Deployment 1	0 hrs		Fri 9/17/21		
1790		Solution Deployment 2 (Cutover to Production)	5,895 hrs		Mon 9/20/21		
TRE TRANSPORT OF THE	2.3.7.1	Complete Cutover to Production Tasks and Activities	4,000 hrs		Mon 9/20/21		Cemer
	2.3.7.2	TMSIS Testing (Continued)	1,115 hrs		Mon 9/20/21		
1793	2.3.7.2.1	Testing 5 - CMS Data Quality Review	1,115 hrs		Mon 9/20/21		
مون دما درست	2.3.7.2.1.1	MPR reviews Preliminary Report and provides additional comments	50 hrs		Mon 9/20/21		Cerner
	2.3.7.2.1.2	Cerner Reviews and Responds to MPR comments, Submits to DHHR for review and approval	40 hrs	1 day	Wed 9/22/21 \	Wed 9/22/21	Cemer, DHHR
	2.3.7.2.1.3	DHHR Submits to CMS for Review	25 hrs	1 day	Thu 9/23/21	Thu 9/23/21 I	DHHR
1797	2.3.7.2.1.4	Review and Resolve Pre-Go Live Issues	1,000 hrs				Cemer, DHHR

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
1798	2.3.7.3	Deliverable Management	780 hrs	20 days	Mon 9/20/21	vion 10/18/21	e pre a sale de c
ws	2,3.7.3.1	D060 Operational Milestone Review	270 hrs	18 days	Mon 9/20/21	Thu 10/14/21	
	2.3.7.3.1.1	Deliverable Walkthrough	20 hrs	3 days	Mon 9/20/21	Wed 9/22/21	Cemer, DHHR, IV&
	2.3.7.3.1.2	and a second of the position of the second o	200 hrs	1 day	Thu 9/23/21	Thu 9/23/21	Cemer
m	2.3.7.3.1.3		25 hrs	7 days	Fri 9/24/21	Mon 10/4/21	DHHR, IV&V
	2.3.7.3.1.4		15 hrs	5 days	Tue 10/5/21	Tue 10/12/21	Cemer
1804	2.3.7.3.1.	DHHR Review and Approval	10 hrs	2 days	Ned 10/13/2	1Γhu 10/14/21	DHHR, IV&V
	2.3.7.3.2	D061 Production Screenshots, Reports and Data for Certification	270 hrs		Mon 9/20/21	10/14/21	7000
1806	2.3.7.3.2.	1 Deliverable Walkthrough	20 hrs	3 days			Cerner, DHHR, IV&
1807	2.3.7.3.2.	Cemer PMO Submit to DHHR for Review	200 hrs	1 day		Thu 9/23/21	
1808	2.3.7.3.2.	DHHR Review and Provide Comments	25 hrs	7 days		Mon 10/4/21	
1809	2.3.7.3.2.	Cemer Revisions (As Necessary)	15 hrs		Tue 10/5/21		
1810	2.3.7.3.2.	t DHHR Review and Approval	10 hrs				DHHR, IV&V
1811	2.3.7.3.3	D062 Report Distribution Schedule	120 hrs		Wed 9/22/21		
1812	2.3.7.3.3.	1 Deliverable Walkthrough	20 hrs	3 days			Cemer, DHHR, IV8
1813	2.3.7.3.3.	Cemer PMO Submit to DHHR for Review	50 hrs	1 day	Thu 9/23/21	Thu 9/23/21	Cerner
1814	2.3.7.3.3.	DHHR Review and Provide Comments	25 hrs	7 days			DHHR, IV&V
1815	2.3.7.3.3.	Cemer Revisions (As Necessary)	15 hrs		Tue 10/5/21		
1816	2.3.7.3.3.	DHHR Review and Approval	10 hrs				1DHHR, IV&V
1817	2.3.7.3.4	D063 Solution Health Monitoring Plan	120 hrs		Wed 9/22/2		
1818	2.3.7.3.4.	1 Deliverable Walkthrough	20 hrs	3 days			Cerner, DHHR, IV
1819	2.3.7.3.4	2 Cerner PMO Submit to DHHR for Review	50 hrs	1 day		1 Mon 9/27/2	
1820	2.3.7.3.4	5 DHHR Review and Provide Comments	25 hrs				DHHR, IV&V
1821	2.3.7.3.4	Z Cerner Revisions (As Necessary)	15 hrs		Thu 10/7/2		
1822	2.3.7.3.4	£ DHHR Review and Approval	10 hrs	-			1DHHR, IV&V
1823	2.3.7.4	Payment Milestone #24: Solution Deployment 2	0 hrs		Fri 10/22/2		
1824	2.3.8	Solution Deployment 3 (Training)	2,290 hrs	-	Mon 9/20/2		
1825	2.3.8.1	Training	1,500 hrs	9 days	Mon 10/25/2	21 Fri 11/5/21	
1826	2.3.8.1.1	Conduct Train the Trainer Event(s) & Maintenance Training Events	1,500 hrs		10/25/21		Cerner, DHHR, IV&V
1827	2.3.8.2	Deliverable Management	790 hrs		Mon 9/20/2		
1828	2.3.8.2.1	D065 System and User Documentation	270 hrs		Mon 9/20/2		
1829	2.3.8.2.1	1 Deliverable Walkthrough	20 hrs	3 days	Mon 9/20/2	1 Wed 9/22/2	1 Cemer, DHHR, IV

ID	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
1830	2.3.8.2.1.2	Cemer PMO Submit to DHHR for Review	200 hrs	1 day	Thu 0/22/24	Thu 9/23/21	
1831	2.3.8.2.1.3		25 hrs	7 days			
1832	2.3.8.2.1.4	Cemer Revisions (As Necessary)	15 hrs	5 days			DHHR, IV&V
1833	2.3.8.2.1.5		10 hrs			Tue 10/12/21	
1834	2.3.8.2.2	D066 Training Materials	270 hrs				DHHR, IV&V
1835	2.3.8.2.2.1	Deliverable Walkthrough	20 hrs		Mon 9/27/21		
1836	2.3.8.2.2.2	Cemer PMO Submit to DHHR for Review	200 hrs	1 day			Cemer, DHHR, IV8
1837	2.3.8.2.2.3	DHHR Review and Provide Comments	25 hrs	7 days		Thu 9/30/21	
1838	2.3.8.2.2.4	Cerner Revisions (As Necessary)	15 hrs				DHHR, IV&V
1839	2.3.8.2.2.	DHHR Review and Approval	10 hrs		Ned 10/13/2		
1840	2.3.8.2.3	D067 Training Report	130 hrs		Ned 10/20/2		DHHR, IV&V
1841	2.3.8.2.3.1	Deliverable Walkthrough	20 hrs		Thu 11/4/21		
1842	2.3.8.2.3.2	Cerner PMO Submit to DHHR for Review	100 hrs	1 day			Cemer, DHHR, IV&
1843	2.3.8.2.3.3	DHHR Review and Approval	100 hrs	1 day		Thu 11/4/21	
1844	2.3.8.2.4	D068 Training Schedule	120 hrs	1 day		Fri 11/5/21	
1845	2.3.8.2.4.1	Deliverable Walkthrough	20 hrs		Mon 9/20/21		
1846	2.3.8.2.4.2	Cemer PMO Submit to DHHR for Review	50 hrs				Cemer, DHHR, IV&
1847	2.3.8.2.4.3	DHHR Review and Provide Comments	25 hrs		Thu 9/23/21		
1848	2.3.8.2.4.4	Cerner Revisions (As Necessary)		7 days		Mon 10/4/21	
1849	2.3.8.2.4.5	DHHR Review and Approval	15 hrs		Tue 10/5/21		
1850	2.3.8.3	Payment Milestone #25: Solution Deployment 3	10 hrs		Ned 10/13/21		DHHR, IV&V
**************	3	Project Monitor and Control	0 hrs		Fri 11/5/21		
1852	3.1	Prepare for and Conduct Weekly Project Management Meetings	45,700 hrs		Mon 6/1/20		
		(Tuesday) - D070, D071, D072	5,000 hrs	359 days	Mon 6/1/20		Cemer, DHHR,
	3.2	Prepare for and Conduct Weekly Data Strategy Meetings (Wednesday)	5,000 hrs	359 days	Mon 6/1/20	Fri 11/5/21	Cemer, DHHR,
STATES AND THE PARTY NAMED IN	3.3	Prepare for and Conduct Monthly Executive Status Review (5th Business Day) - D070, D071, D0 <b>72</b>	2,500 hrs	359 days	Mon 6/1/20	Fri 11/5/21	Cerner, DHHR,
	3.4	Prepare for and Conduct Monthly Risk Review Board Meetings (2nd Thursday) - D072	2,500 hrs	359 days	Mon 6/1/20	Fri 11/5/21	Cemer, DHHR,
er e e e e e e e	3.5	Prepare for and Conduct Monthly Change Control Board Meetings (3rd Thursday)	2,500 hrs	359 days	Mon 6/1/20	Fri 11/5/21	Cemer, DHHR,
to the contract	3.6	Prepare for and Conduct Weekly Internal Project Team Meetings (Tuesday)	5,000 hrs	359 days	Mon 6/1/20		
1858	3.7	Conduct Ongoing & Ad-Hoc Technical Configuration Reviews with Technical Teams	10,000 hrs	359 days	Mon 6/1/20	Fri 11/5/21	Cemer

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
1859	3.8	Monitor Engineering Releases for Code Updates	6,000 hrs	359 days	Mon 6/1/20	Fri 11/5/21	Cemer
1860		Deliverable Management	7,200 hrs	359 days	Mon 6/1/20	Fri 11/5/21	
1861		D070 Project Status Reporting (Weekly and Monthly)	1,500 hrs	359 days	Mon 6/1/20	Fri 11/5/21	Cemer, DHHR, IV&\
1862		D071 Project Schedule and Work Plan (Bi-Weekly)	1,000 hrs	359 days	Mon 6/1/20	Fri 11/5/21	Cerner, DHHR, IV&
1863		D072 Risk Register/Exception Plan (As Applicable)	500 hrs	359 days	Mon 6/1/20	Fri 11/5/21	Cemer, DHHR, IV&
1864	ļ	D073 Updated Training Management Plan (As Applicable)	250 hrs	359 days	Mon 6/1/20	Fri 11/5/21	Cemer, DHHR, IV&
1865	1	D074 Updated RTM (As Applicable)	1,000 hrs	359 days	Mon 6/1/20	Fri 11/5/21	Cerner, DHHR, IV&
1866	4	D075 Updated Project Management Components (As Applicable)	1,200 hrs				Cemer, DHHR, IV&V
1867	3.9.7	Corrective Action Plan (As Applicable)	250 hrs				Cemer, DHHR, IV&V
1868	1	SLA Report (Monthly)	1,500 hrs	359 days	Mon 6/1/20	Fri 11/5/21	Cerner, DHHR, IV&\
1869		Operations (Initial Contract Term)	200,450 hrs	1226 days	Mon 6/1/20	Mon 5/5/25	
1870		Operations Go- Live	3,500 hrs	22 days	Mon 11/2/20	Mon 12/7/20	
1871	-	Establish Operations Support Teams & Processes	3,500 hrs	22 days	Mon 11/2/20	Mon 12/7/20	Cerner, DHHR, IV&
1872		Recurring Operations Activities	148,500 hrs	1118 day	Mon 11/2/20	) Mon 5/5/25	
1873		Conduct Operations Management Status Meetings (As Necessary, Weekly after DDI)					Cemer, DHHR, IV&V
1874	4.2.2	Ongoing Solution and Data Maintenance Activities (i.e.: Recurring Data Loads)					Cemer, DHHR
1875	4.2.3	Ad-Hoc Deliverable Updates and Approvals as Needed					Cerner, DHHR, IV&
1876	4.2.4	Conduct Ongoing & Ad-Hoc Technical Configuration Reviews with Technical Teams				) Mon 5/5/25	
1877	4.2.5	Monitor Engineering Releases for Code Updates				0 Mon 5/5/25	
1878	4.2.6	Ticket Management & General Operations Support (includes help desk, consulting operations, etc.)					Cerner, DHHR
1879	4.3	Certification Management				∦on 11/14/2	,
1880	4.3.1	Recurring Tasks				Fri 11/4/22	
1881	4.3.1.1	Collect and Manage Artifacts	10,000 hrs				Cerner, DHHR, IV&
1882	4.3.1.2	Quarterly or Ad-Hoc IV&V Reviews (As Requested)	1,500 hrs				Cemer, DHHR, IV&
1883	4.3.2	Certification Milestone Reviews (As Applicable)	15,450 hrs			Vion 11/14/2	
1884	4.3.2.1	R2 Gate Review - Operational Milestone	5,000 hrs				Cemer, DHHR, IV&
1885	4.3.2.2	R3 Gate Review - Final Milestone	10,450 hrs			Vion 11/14/2	
	4.3.2.2.1	Preparation Activities	7,750 hrs			1 Thu 9/29/2:	
1887	4.3.2.2.1	.1 Certification Evidence Packets	4,500 hrs			Thu 7/7/22	
1888	4.3.2.2.1	1 Cemer Develop Certification Evidence Packets & Submit for DPHHS/IV&V Review	3,500 hrs	83 days	Fri 11/5/21	Wed 3/9/22	2 Cemer

	(	-al-Nama	Work	Duration	Start	Finish	Task Ow ner
M	VBS	ask Name  DHHRS/IV&V CEPs Review, Revisions and Approve	als 1,000 hrs	66 days	Fri 4/1/22	Thu 7/7/22	Cemer, DHHR,
389 4	.3.2.2.1.	DHIRS/IVAV OLI STOTOTI		165 days	Fri 11/5/21	Thu 7/7/22	
200	1.3.2.2.1.	CMS Checklists	3,250 hrs		-1.44/5/04	Wed 3/9/22	Cemer
	4.3.2.2.1.	Cemer Update CMS Checklists & Submit for	2,500 hrs	00 daye			Compar DHHR
091	7.012121	DPHHS/IV&V Review  DHHR Checklist Reviews, Revisions and Approvals	750 hrs	128.5	Fri 12/31/21	Thu ////22	Cerner, DHHR,
892	4.3.2.2.1			days	Thu 7/7/22	Thu 7/7/22	
	1	*Milestone: All Approved Checklists and CEPs Loade	d to 0 hrs	0 days			
893	4.3.2.2.1	State Repository for IV&V Review	0 hrs	60 days	Wed 7/6/22	Wed 9/28/2	2 IV&V
1904	4.3.2.2.1	iV&V Independent Review Period	2,700 hr		- 1 0 10 100	√lon 11/14/	22
	4.3.2.2.2	Execution Activities	1,000 hr		-: 0/0/00	Fri 9/9/22	
	4.3.2.2.2	R3 Review Planning Workshop				2 Wed 10/5/2	22
		Charling Status Check Point With Drink & IV&V	500 hrs		44178	22 Von 11/14	
	4.3.2.2.2	Conduct D2 Paview	1,050 h			22 Mon 11/14	
	4.3.2.2.	DUILD/Corner Present Module Overview	1,000 h			22 vlon 11/14	
	4.3.2.2.	Descript Action Items	50 hrs	5 day	s Wed 11/9/		
	4.3.2.2.	Actions Items	150 hr				
	4.3.2.2	••	14,000	nrs 867 da	ys Mon 11/8/	21 MOI 5/5/	25
1902	4.4	Deliverable Management	14,000	hrs 867 da	ays Mon 11/8	21 MOU 2/2/	25 Comer DHHR IV
1903	4.4.1	As Needed or Requested Only	500 h	rs 867 da	ays Mon 11/8	/21 Mon 5/5/	25 Cemer, DHHR, IV
1904	4.4.1.1	D007 Project Work Plan  Deliverable Dictionary (see beginning of Appendix 2)	500 h	rs 867 d	ays Mon 11/8	/21 Mon 5/5/	25 Cemer, DHHR, IV
1905	5 4.4.1.2	Deliverable Dictionary (see beginning of the	500 h	rs 867 d	ays Mon 11/8	/21 Mon 5/5	/25 Cemer, DHHR, IV
1906	6 4.4.1.3	D019 Master Test Plan (Testing Management Plan)	500 h	rs 867 d	ays Mon 11/8	1/21 Mon 5/5	/25 Cemer, DHHR, IV
1907	7 4.4.1.4	D024 Requirements Traceability Matrix (RTM)	500 h	nrs 867 d	lays Mon 11/8	3/21 Mon 5/5	/25 Cemer, DHHR, IV
	8 4.4.1.	Data Load Schedule	500 1	nrs 867 d	lays Mon 11/8	3/21 Mon 5/5	125 Cemer, DHHR, IV
	9 4.4.1.	D034 Data Conversion Test Cases	500	nrs 867 (	days Mon 11/6	B/21 Mon 5/5	6/25 Cerner, DHHR, I\
1	0 4.4.1.	D035 Data Conversion Test Results	500	hre 867	days Mon 11/	8/21 Mon 5/	5/25 Cerner, DHHR, IV
1	4.4.1.	Date Database Design Document and Data Modern	500	967	days Mon 11/	8/21 Mon 5/5	5/25 Cerner, DHHR, N
		DO 40 Interface INVENTORY	500	h.m. 967	days Mon 11/	8/21 Mon 5/	5/25 Cemer, DHHR, I
	12 4.4.1	Test Cases		L 967	days Mon 11.	/8/21 Mon 5/	5/25 Cemer, DHHR, I
	13 4.4.1	and Stross Test Results	500	967	days Mon 11	/8/21 Mon 5/	5/25 Cemer, DHHK, I
	14 4.4.1	no 42 Decembrion Test Cases	500	nrs oor	days Mon 11	/8/21 Mon 5	/5/25 Cerner, DHHR, I
	15 4.4.1	no 47 Degreesion Test Results			days Mon 11	/8/21 Mon 5	/5/25 Cerner, DHHR,
	16 4.4.1	The standard and Forms inventory		hrs 867	uays World	/8/21 Mon 5	/5/25 Cemer, DHHR,
	17 4.4.	and a stand Integration Plan	500	) hrs 867	days won I	19/21 Mon 5	15/25 Cerner, DHHR,
19	18 4.4.	15 D049 System Integration Test Cases 16 D050 System Integration Test Cases	500	) hrs 867	days Mon 1	1/0/21 1/10/11	
19	919 4.4.	.16 D050 System integration 100 0					

ID	WBS	Task Name	144				
1920	4.4.1.17	And the second s	/Work	Duratio	n Start	Finish	Task Owner
	4.4.1.18	D051 System Integration Test Results					1
The Williams		D052 Training Management Plan	500 hr		ys Mon 11/8/21	Mon 5/5/25	Cemer, DHHR, IV&
A Laboratory of	4.4.1.19	D053 User Acceptance Test Cases	500 hr	o oor da	ys Mon 11/8/21	Mon 5/5/25	Cerner, DHHR, IV&
Charge Same Committee	4.4.1.20	D054 User Acceptance Test Results and Letter	500 hr	oor day	ys Mon 11/8/21	Mon 5/5/25	Cemer, DHHR, IV&
- n .man.	4.4.1.21	D056 Federal Review Supporting Documentation	500 hr	oo/ day	/s Mon 11/8/21	Mon 5/5/25	Cemer, DHHR, IV&
THE RESERVE AND ADDRESS OF	4.4.1.22	D058 implementation Certification Letter	500 hrs	oor day	s Mon 11/8/21	Mon 5/5/25	Cerner, DHHR, IV&
The District of	4.4.1.23	D062 Report Distribution Schedule	500 hrs	867 day	s Mon 11/8/21	Mon 5/5/25	Cemer, DHHR, IV&
	4.4.1.24	D063 Solution Health Monitoring Plan	500 hrs	867 day	s Mon 11/8/21	Mon 5/5/25	Cemer, DHHR, IV&
The second second second	4.4.1.25	D065 System and User Documentation	500 hrs	867 day	s Mon 11/8/21	Mon 5/5/25	Cemer, DHHR, IV&V
	4.4.1.26	D066 Training Materials	500 hrs	867 days	8 Mon 11/8/21	Mon 5/5/25	Cemer, DHHR, IV&V
VA 4485 57 9	4.4.1.27	D067 Training Report	500 hrs	867 days	Mon 11/8/21	Mon 5/5/25	Cemer, DHHR, IV&
1931	4.4.1.28	D068 Training Schedule	500 hrs	867 days	Mon 11/8/21	Mon 8/5/25 C	emer, DHHR, IV&\ Cemer, DHHR, IV&\
1932	4.5	Turnover and Closeout (Initial Contract Term)	500 hrs	867 days	Mon 11/8/21	Mon 5/5/25 C	emer, DHHR, IV&\ emer, DHHR, IV&\
1933	4.5.1	Complete Tumover and Closeout Activities	7,500 hrs	249 days	Fri 5/3/24	Mon 5/5/25 (	emer, DHHR, IV&
1934	4.5.2	Deliverable Management	6,000 hrs	249 days			
1935	4.5.2.1		1,000 hrs		Fri 5/3/24 W	vion 5/5/25 C	emer, DHHR, IV&
1936	1.5.2.1.1	D069 Turnover and Closeout Management Plan	270 hrs	18 days			į
1937	1.5.2.1.2	Deliverable Walkthrough	20 hrs	3 days	Fri 5/3/24 W		
1938 4	.5.2.1.3	Cerner PMO Submit to DHHR for Review	200 hrs	1 day	Mad 5/3/24	ue 5/7/24 Ce	mer, DHHR, IV&
1939 4	.5.2.1.4	DHHR Review and Provide Comments	25 hrs		Wed 5/8/24 W	Ved 5/8/24 Ce	mer
1940 4		Cemer Revisions (As Necessary)	15 hrs		Thu 5/9/24 F	ri 5/17/24 DH	IHR, IV&V
1941 4		DHHR Review and Approval	10 hrs	2 days	Mon 5/20/24 F	ri 5/24/24 Ce	mer
1942 4.		Statement of Department Ownership	140 hrs	2 uays	Tue 5/28/24 We	ed 5/29/24 DH	HR, IV&V
1943 4.		Deliverable Walkthrough	20 hrs		Mon 4/7/25 We		
944 4.		Cerner PMO Submit to DHHR for Review	70 hrs	3 days	Mon 4/7/25 W	ed 4/9/25 Cer	ner, DHHR, IV&V
945 4.		DHHR Review and Provide Comments	25 hrs	i day i	nu 4/10/25 Th	u 4/10/25 Cer	ner
946 4.5		Cemer Revisions (As Necessary)	15 hrs	7 days I	Fri 4/11/25 Mo	n 4/21/25 DH	TR, IV&V
947 4.5		DHHR Review and Approval	10 hrs	5 days	ue 4/22/25 Mo	n 4/28/25 Cen	ner
948 4.5		Certificates of Destruction		2 days T	ue 4/29/25 Wed	d 4/30/25 DHH	IR, IV&V
949 4.5		Deliverable Walkthrough	270 hrs	18 days N	Ion 4/7/25 Wed	4/30/25	
	.2.3.3	Cemer PMO Submit to DHHR for Review	20 hrs	3 days M	lon 4/7/25 We	d 4/9/25 Cerr	er, DHHR, IV&
W. 17 M.		DHHR Review and Provide Comments	200 hrs	ruay 11	nu 4/10/25 Thu	4/10/25 Cem	ег
951 4.5		Cerner Revisions (As Necessary)	25 hrs	7 days F	ri 4/11/25 Mon	4/21/25 DHH	R. IV&V
952 4.5.	.∠.ა.5	DHHR Review and Approval	15 hrs	o days Tu	ie 4/22/25 Mon	4/28/25 Cem	er
		The second of the parties of the second of t	10 hrs	2 days Tu	e 4/29/25 Wed	AIROIDE DIVI	D 0 (0)

D	WBS	Task Name	Work	Duration	Start	Finish	Task Ow ner
1053	4.5.2.4	Project Clossout Report	320 hrs	18 days	Mon 4/7/25	Wed 4/30/25	
	4.5.2.4.1	Deliverable Walkthrough	20 hrs	3 days	Mon 4/7/25	Wed 4/9/25	Cemer, DHHR, IV&
	4.5.2.4.2	Cemer PMO Submit to DHHR for Review	250 hrs	1 day	Thu 4/10/25	Thu 4/10/25	Cemer
	4.5.2.4.3	DHHR Review and Provide Comments	25 hrs	7 days	Fri 4/11/25	Mon 4/21/25	DHHR, IV&V
F		Cerner Revisions (As Necessary)	15 hrs	5 days	Tue 4/22/25	Mon 4/28/25	Cerner
	4.5.2.4.5		10 hrs	2 days	Tue 4/29/25		DHHR, IV&V
market promoter		Tumover and Closeout Corrective Action Plans (As Needed)	500 hrs	249 days	Fri 5/3/24	Mon 5/5/25	Cemer, DHHR, IV&