Proc Folder:	1739608		**Reason for Modification:**
Doc Description:	Medical Licensure / Records Database Maintenance System		Addendum 05

Proc Type:	Central Master Agreement		
Date Issued	**Solicitation Closes**	**Solicitation No**	**Version**
2025-11-24	2025-12-17 13:30	CRFP 0945 BOM2600000001	6

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON   WV   25305
US

VENDOR

Vendor Customer Code: VS0000019201

Vendor Name: Elixir Lab USA Inc.   d/b/a Cardinality.ai

Address

Street: 155 Gibbs St, 4th Floor,

City: Rockville,

State: MD

Zip: 20850

Principal Contact:

Anna Harper, Chief Administrative Officer

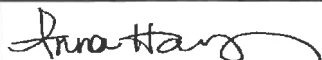**Vendor Contact Phone: (513) 907-1068**

FOR INFORMATION CONTACT THE BUYER
Larry D McDonnell
304-558-2063
larry.d.mcdonnell@wv.gov

Vendor
Signature X   FEIN# - 8 2-2 6 6 3 8 3 9   DATE - 17 Dec 2025

All offers subject to all terms and conditions contained in this solicitation

West Virginia Board of Medicine

Request for Proposal (RFP)

Medical Licensure / Records Database Maintenance System RFP

Due Date: Dec 17, 2025

Cardinality's Technical Response to Medical Licensure / Records Database Maintenance System

Submitted by	Submitted to
Elixir Lab USA Inc (d/b/a Cardinality.ai)	Larry D McDonnell
155 Gibbs St, 4th Floor,	Department of Administration
Rockville, MD 20850	Purchasing Division
Email: sales@cardyai.com	2019 Washington Street East
www.Cardyai.com	Charleston, WV 25305
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Cardinality's Response to WVBOM - Medical Licensure/Records Database Maintenance System RFP

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Title page

RFP Subject: Medical Licensure / Records Database Maintenance System RFP

RFP Number: CRFP 0945 BOM2600000001

Vendor's Name: Elixir Lab USA Inc. d/b/a Cardinality.ai

Business Address: 155 Gibbs St, 4th Floor, Rockville, MD 20850

Telephone Number: (513) 907-1068

Name of Contact Person: Anna Harper, Chief Administrative Officer

E-mail Address: sales@cardyai.com

Vendor Signature:

17-Dec-2025
Date

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1. Cover Letter

Attn: Larry D McDonnell,   **Dec 17, 2025**
West Virginia Board of Medicine
Department of Administration, Purchasing Division
304-558-2063
larry.d.mcdonnell@wv.gov

Dear Larry D McDonnell,

RE: **RFP#: CRFP 0945 BOM2600000001** for Medical Licensure / Records Database Maintenance System

Cardinality.ai (Cardinality) is pleased to submit this response to **RFP CRFP 0945 BOM2600000001** to support the **West Virginia Board of Medicine (WVBOM)** in acquiring a modern, cloud-hosted **Medical Licensure / Records Database Maintenance System**. Our proposed solution addresses the requirements outlined in the RFP by providing unified functionality for licensure, renewals, disciplinary management, document retention, and the Board's public-facing website.

Cardinality's experience within West Virginia's technical and operational environment positions us to deliver a compliant and efficient implementation. Through our work with the **West Virginia Department of Human Services**, we have gained direct familiarity with OMIS guidelines and state integration practices. The successful deployment of the Child Welfare Mobile Communication Application where Phase 1 was delivered within three months of project initiation demonstrates our ability to configure and implement systems rapidly and in alignment with state processes.

Our proposed **CardyCares Provider Management (CC-PM)** solution is a configurable licensing and regulatory management system designed for health oversight agencies. CC-PM supports the full lifecycle of individual licensure (medical doctors, podiatric physicians, physician assistants) and organizational registration (hospitals, clinics, health systems). The platform provides real-time updates, configurable security roles, role-appropriate access, and integrated reporting, meeting WVBOM's requirements for a comprehensive and reliable regulatory system.

Relevant State Experience

Cardinality is currently implementing licensing and credentialing systems for multiple state agencies. These engagements reflect our ability to meet regulatory, functional, and integration requirements similar to those identified by WVBOM:

- **Wyoming Department of Health** – Care Case Management System (CCMS) for Home and Community Based Services (HCBS) program.
- **New York Office of Children and Family Services** – Foster Parent Licensing System (in progress)
- **Nevada Department of Education** – Educator Licensing Modernization (DDI underway)
- **Oregon DHS & Oregon Health Authority** – Provider Enrollment & Management System (PEMS) supporting credentialing and enrollment of healthcare providers (in progress)

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These projects demonstrate Cardinality's ability to configure, deploy, and maintain licensing systems that operate within complex regulatory environments and across multiple program areas.

Commitment to WVBOM

Cardinality is prepared to deliver a solution that supports WVBOM's mission through:

- Streamlined licensing and renewal processes
- Enhanced disciplinary and complaint management capabilities
- Improved online services for applicants and credential holders
- Expanded reporting capacity to support statutory and public transparency requirements

Our **AWS GovCloud-hosted CC-PM solution** offers a secure, configurable, and operationally aligned platform designed to meet WVBOM's needs throughout the contract term. We appreciate the opportunity to submit this proposal and look forward to supporting WVBOM in this important modernization initiative.

We are excited to demonstrate our CC-PM's capabilities during the evaluation process and to answer any questions the evaluation team may have. Should you have any questions or require further information, please do not hesitate to contact me at **317-629-7054** or sales@cardyai.com

Kevin Jones

Kevin Jones – Chief Strategy Officer
Elixir Lab USA Inc. (d/b/a Cardinality.ai)

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2.   Executive Summary

Cardinality is pleased to submit our proposal in response to **RFP No. CRFP 0945 BOM2600000001** issued by the **West Virginia Board of Medicine (WVBOM)** for the **Medical Licensure / Records Database Maintenance System**. We are confident in our ability to meet the current and future needs of WVBOM through the implementation of our **CardyCares Provider Management (CC-PM)** solution. We have reviewed the objectives and expectations outlined in the RFP Scope of Work and believe our CC-PM solution built on the configurable EmpowerPlatform is well aligned to meet the Board's licensing, regulatory, and public service objectives.

The CC-PM solution offers WVBOM a secure, modern cloud-based platform that replaces aging systems with a comprehensive suite for license lifecycle management, credentialing, complaint tracking, renewals, compliance, and public transparency. CC-PM is an intuitive, mobile-responsive solution designed to support both individual and facility-level licensure types, bringing WVBOM's licensing and records operations into a unified, user-friendly environment. The solution enhances operational efficiency by automating workflows, provides security through role-based access, and supports interoperability through integration with partner systems like FSMB and the WV State Treasurer's eGov platform. It also supports mobile access, document exchange, and incorporation of payment information from the State Treasurer's E-Gov platform, along with integrated public data search, while maintaining HIPAA, PII, and WCAG 2.1 Level AA compliance.

Our solution, developed in collaboration with regulatory and licensing experts, is shaped by proven partnerships with other state medical and professional licensing boards. Cardinality's successful implementations for boards and agencies in **Indiana, Maryland, Georgia, Oregon and Hawaii**, as well as ongoing work in **West Virginia** and **Nevada**, establish us as a trusted partner experienced in delivering complex licensing and regulatory modernization projects.

With Cardinality, WVBOM will gain the flexibility to bring specific functionality live in phases while coexisting with its current systems, due to the inherent modularity of the EmpowerPlatform. This approach has been successfully demonstrated in Georgia, where our Provider Licensing and Oversight portals were piloted within 3 months of kickoff and scaled statewide within 6 months, all while maintaining full coexistence with legacy systems.

While the work is to deliver a modern, fully integrated licensure and regulatory management solution, the success depends on the implementation methodology. Our goal is not only to empower WVBOM stakeholders after go-live but also throughout the transformation journey through our innovative and proven **CardyWay Implementation Model** (illustrated in **Figure 1**) a combination of processes and tools designed to bring certainty to an accelerated and successful implementation.

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The CardyWay Implementation Model

An Innovative and Proven Methodology for GovTech Modernization

GovTech's biggest challenge is not technology, it is implementation. The CardyWay solves this with an AI-powered gap-based implementation methodology designed for government programs, ensuring speed, certainty, and trust. This model acknowledges the constraints of current DDI (Design, Development & Implementation) models for Large Complex Govt modernizations

It is impossible to capture all requirements up front.

Current DDI models struggle to quantify/mitigate risks related to data migration and legacy system integrations, which causes significant delays and cost overruns

Most DDI models are inflexible, making changes expensive with significant impact to project timeline

Key elements of the CardyWay Implementation model

Gap-Based Sprints

- Start with Version 0 (v0) that addresses most program needs upfront
- Incrementally close gaps through sprint cycles (v0.1 → v0.2 → v1.0)
- Deliver faster time-to-value with transparent, low-risk progress every sprint

Scenario Lens

- Move beyond complete requirements up-front to data-driven scenario profiling
- Visualize actual system usage through intuitive heat maps
- Use historical data to identify gaps and opportunities to make informed modernization decisions

GovTech PM Copilot

- Transparent and reliable view of real project progress
- AI-powered status reports integrating data from Jira, GitHub with requirements, estimates, and defect tracking
- Bridges the gap between technical reality and stakeholder perception

AI Assistant for Audit and Validation

- Business leaders can get transparent project status, directly from the system metadata, without relying on people & reports
- Verify delivered pages, wired workflows, and implementation progress using the AI Assistant

Figure 1: CardyWay Implementation Model

A key element of this model is the Gap-Based Sprints that provide a v0 of the solution within 30 days from kickoff and incremental versions every sprint. These gap-based sprints, with incremental releases at the end of each sprint, will significantly reduce delivery risks while maintaining transparency in our progress toward the go-live milestone. The CC-PM solution offers a <u>high degree of configurability and ease of updates</u> to enable the solution to evolve with WVBOM's unique and changing needs. We do all of this while providing the <u>lowest total cost of ownership</u>. Our pre-built CC-PM solution and innovative CardyWay Implementation Model are designed to serve you better so that you can better serve healthcare professionals and the citizens of West Virginia.

Why Cardinality.ai?

Mission & Alignment: Committed to Public Service and Regulatory Integrity

The West Virginia Board of Medicine (WVBOM) faces rising costs and operational limitations associated with its current licensing framework and manual processes. This creates both urgency and opportunity making implementation speed, interoperability, and reliable delivery essential success factors for modernization. Cardinality is aligned with WVBOM's mission to enhance regulatory oversight and public protection through a system that improves staff efficiency, increases transparency, and supports long-term operational resilience.

Delivery Approach: Proven, Rapid, Low-Risk Implementation Model

With a proven CC-PM solution deployed for multiple state licensing and health agencies, and extensive experience migrating legacy systems and onboarding licensees at scale, we are positioned to accelerate timelines and reduce transition risks. Our implementation approach emphasizes rapid

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onboarding, early readiness for data migration and integration, and iterative validation with WVBOM stakeholders to demonstrate measurable progress from project inception.

Platform Capability: Configurable, Secure, Future-Ready Technology

WVBOM has expressed a preference for a configurable platform that supports rapid delivery while minimizing long-term reliance on vendor customization. CC-PM aligns with this objective by offering configuration flexibility, audit tracking, and governance control over release management providing WVBOM full transparency and control. The platform combines low-code configuration capabilities with built-in security, traceability, and modular integration patterns that align with enterprise architecture standards adopted by West Virginia's Office of Technology.

Knowledge Transfer & Workforce: Empowering WVBOM Staff and Local Talent

Our delivery model is intentionally collaborative, engaging WVBOM program and IT staff from project start through go-live. This approach reinforces hands-on knowledge transfer, strengthens agency ownership of the system, and builds a sustainable operations posture. By equipping WVBOM staff to configure forms, workflows, and business rules independently, the agency can adapt quickly to regulatory changes without long-term vendor dependency.

Differentiation & Commitment: Empathy-Led, Mission-Driven Partnership

Our commitment extends beyond implementation. We aim to deliver a reliable, unified solution that supports WVBOM's regulatory mission while fostering long-term independence, operational continuity, and service excellence for staff, applicants, and licensees. Cardinality's approach reflects an empathy-led partnership grounded in understanding regulatory programs, reducing staff workload, and strengthening the Board's ability to serve the public.

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Why Cardinality?

Proven for Licensing Solution to Agencies
Our solutions in Maryland, Georgia, Hawaii and Indiana, Wyoming improving the licensing experience and outcomes for agencies

Modular & Coexisting
Flexible standalone modules, fully interoperable with existing Ancillary system to improve data integrity for federal and state reporting.

Easy to Update (No Vendor Lock)
We give control back. Low-code, configurable platform to make changes quickly and independently.

Fast Implementation, with Certainty
Pre-built, fully functional with 80% requirements out of the box

Mission Driven
Technologists driven by a deep sense of mission to empower Workforce Development through technology and improve lives—because we've felt its impact firsthand.

Gap-based implementation model
V0 by day 30, followed by incremental updates at the end of each sprint minimizes delivery risks and enhances transparency. This approach provides steady progress towards CC-PM v1, final solution of the modernized Medical Licensure / Records Database Maintenance System

Lowest Total Cost
SaaS business model, the advantage of continuous innovation.

Figure 2: Key Differentiators

Our 'Why' is Grounded in Empathy and Mission.

We are more than a technology partner; our mission is personal. Our leadership and team members, including CEO Thiag and CSO Kevin, have firsthand knowledge, giving us a shared experience of vulnerability and a deep understanding of the challenges you face. This is why we care so deeply it fuels our mission: to empower government workers through rapid, relentless modernization. Every action we take is governed by our core values: doing what's right, empowering together, leading with empathy, focusing on outcomes, and turning possibility into reality.

We are completely aligned with WVBOM's commitment to strengthening public protection, service accountability, and regulatory integrity by equipping Board staff, licensees, and stakeholders with modern, intuitive, and data-driven technology that supports efficient licensing, enforcement, and oversight for medical professionals in the State of West Virginia. This modernization empowers the Board to enhance transparency, streamline operations, and uphold the highest standards of professional practice while adapting to evolving legislative and administrative requirements.

Our solution is intuitive to use, and our technology is easy to implement and maintain without the need for expensive development resources. Most configuration and maintenance activities can be performed by business analysts and WVBOM staff, who will be trained on our platform as part of the implementation. This training is further supported by our in-built workforce development capabilities, including the integrated **Learning Management System (LMS)** and **Knowledge Management System (KMS)** available within the CC-PM solution.

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Government modernization is complex and high-stakes and is often met with skepticism, which is why we lead with trust, transparency, and early alignment through access to a Version 0 solution and rapid configurable changes to mitigate the skepticism from past project frustrations. With tools like our **gap-based sprints, AI PMO Copilot, CardyAI Assistant, and Scenario Lens** for real-time traceability, we bring innovation that is both **practical and proven**.

We apply firsthand knowledge of the challenges state licensing boards face managing complex application workflows, credential verification, and enforcement case tracking supported by our experience implementing enterprise systems for regulatory agencies. For example, as part of Maryland's statewide Child Welfare system, we implemented a comprehensive Foster Care Licensing module that manages multi-stage applications, background checks, home studies, inspection scheduling, supervisory approvals, and ongoing compliance monitoring. These workflows involve coordination across multiple stakeholders, validation of diverse documentation, and strict adherence to regulatory timelines.

Through this work, we developed configurable licensing workflows that adapt to role-based review steps, conditional requirements, automated notifications, and data-driven decision support. The same configuration patterns will be applied to WVBOM's processes, such as initial physician licensure, facility registration, renewal cycles, and disciplinary case actions enabling structured, transparent, and auditable licensing operations.

Cardinality and WVBOM share a unified goal: to implement a modern, efficient, and compliant system that enhances regulatory oversight, operational transparency, and service delivery for medical professionals and the citizens of West Virginia. We are confident that our solution fulfills all technical and functional requirements for a successful implementation.

Proven Delivery Across Government Agencies

With over **eight years** of successful deployments across state agencies and county governments in **Maryland and Georgia** and current implementations underway in **West Virginia, Oregon, Indiana, Hawaii, Wyoming, Nevada and New York**, Cardinality brings extensive experience delivering secure, cloud-native licensing and regulatory systems for healthcare, education, and human services agencies. While the proposed CardyCares Provider Management (CC-PM) solution is pre-built for medical licensure, it also includes fully integrated modules for renewals, compliance, credentialing, complaint management, and public transparency supporting WVBOM's oversight responsibilities and long-term modernization goals.

Our licensing solution has been successfully implemented in similarly regulated environments. For example, through a statewide engagement with the **Georgia Department of Human Services (DHS)**, Cardinality deployed a modern **Foster Care Provider Management System** using our EmpowerFamily platform and Georgia Communicare. This solution supports over 6,500 external users and 2,100 DHS caseworkers, offering secure, mobile-friendly portals and role-based workflows for diverse user groups including case managers, foster parents, CASA volunteers, and legal stakeholders. Cardinality's platform enabled real-time communication, streamlined credentialing processes, and improved provider oversight across Georgia's child welfare system. These capabilities including configurable forms, secure document exchange, audit-ready records, and dynamic

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dashboards are directly aligned with WVBOM's regulatory needs for managing medical licensure, renewals, and stakeholder engagement in a secure, transparent, and user-centric environment.

Further, the same platform powers systems for state agencies such as an **Educator Licensing System for the Nevada Department of Education**, a **Foster Parent Licensing System for the New York Office of Children and Family Services**, and a **Provider Enrollment & Management System** for the **Oregon Department of Human Services**. In addition, implementation is currently underway with the **West Virginia Department of Human Services**, where we are developing a **mobile communication app to support child-welfare caseworkers and families.** These projects demonstrate the flexibility of our solution to support diverse licensing and case management frameworks. Each engagement reinforces our ability to meet high standards for **data security, WCAG 2.1 accessibility, and integration with third-party platforms such as FSMB, and state payment gateways** capabilities directly aligned with WVBOM's licensing and regulatory needs.

The solution also empowers administrative staff and board members to review, approve, and manage applications and renewals with real-time oversight through secure, user-specific workspaces. With role-based access, automated workflows, configurable forms, and built-in tracking, our platform supports efficient daily operations while ensuring full auditability and compliance with regulatory standards.

This national experience demonstrates that our CC-PM solution is informed by best practices and lessons learned from complex, multi-jurisdictional deployments making it uniquely positioned to meet the regulatory, operational, and service expectations of the West Virginia Board of Medicine.

Cardinality's CC-PM solution features an intuitive interface designed to evolve with WVBOM's changing requirements and user needs.

WVBOM staff and administrators can independently manage forms, workflows, and business rules, enabling greater control and operational flexibility. This minimizes long-term support costs by reducing reliance on vendor-led customization.

Licensees and applicants benefit from a secure, mobile-friendly portal that supports end-to-end services, including online renewals, payment, secure messaging, and real-time status updates.

With Cardinality, WVBOM gains not just a modern technology solution but a long-term partner committed to advancing public protection through digital transformation, process transparency, and service excellence in medical licensure and regulatory oversight.

Our Understanding of the Scope of Work

We understand that the West Virginia Board of Medicine (WVBOM) seeks a comprehensive, secure, and cloud-based solution to modernize its Medical Licensure and Records Maintenance System. Cardinality fully understands the breadth and complexity of the West Virginia Board of Medicine's (WVBOM) requirements as outlined in the RFP. Our CardyCares Provider Management (CC-PM) solution aligns with all major scope areas and is designed to support WVBOM's objectives of modernization, compliance, and improved service delivery. Key areas of alignment include:

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Functional Requirements	
WVBOM Requirement	**How Cardinality Meets It**
End-to-end credentialing for MDs, DPMs, and PAs including intake, renewals, fee processing, license printing, and communication	CC-PM supports full lifecycle licensing including applications, renewals, payments, secure messaging, document uploads, authorization, permits, and registrations
Support current credential types and future expansion	Low-code configuration enables adding new credential types as regulations evolve without custom coding
Online services for applicants & licensees with real-time status	Mobile-friendly self-service portal with real-time updates, status visibility, and printable credentials
Staff & board portals for review, approval, and oversight	Role-based dashboards and workspaces for staff and reviewers to track, approve, archive, and manage records
Public license lookup and verification	Public portal integrated with WVBOM website supporting free real-time license search
Audit trails, workflow automation, reporting & dashboards	Configurable workflows, automation, dashboards, audit logs, and customizable reporting tools
Secure documentation & communication	Secure document management, internal messaging, notifications, version control, and activity logging
Legacy data migration	Full-service migration (mapping, cleansing, validation, reconciliation) with experience in GA, MD, IN
User-friendly interface & minimal training	Intuitive UI, role-based dashboards, smart forms, contextual guidance, low learning curve
Local workforce enablement	Low-code environment + training + knowledge transfer to allow staff to manage system independently

Technical Requirements	
WVBOM Requirement	**How Cardinality Meets It**
Cloud-based, scalable solution	Hosted on AWS GovCloud
Configurable workflows & independent admin control	WVBOM can manage forms, rules, content, workflows without coding or vendor reliance
Website integration	Web portal integrates directly with WVBOM website

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Third-party system integration (FSMB, E-Gov, others)	Secure APIs & file transfer protocols for real-time or scheduled integration with FSMB, WV E-Gov, and other systems
Support for future system evolution	Modular design, low-code updates, and configurable architecture
Mobile-compatible system	Mobile-responsive platform with applicant and staff access
Long-term maintainability with low vendor reliance	Administrative control + low-code configuration reduces reliance on vendor developers

Security, Accessibility & Compliance Requirements	
WVBOM Requirement	**How Cardinality Meets It**
HIPAA & PII compliance	HIPAA/PII compliant platform with attestation available
WCAG 2.1 Level AA accessibility	Fully WCAG 2.1 AA-compliant interface for applicants and staff
Audit logs & traceability	Advanced audit logging, action tracking, and archived version history
Secure login & role-based access	Role-based access controls, secure member login, staff approval workflows
Session security	Configurable session timeouts
Data encryption	Encryption in transit and at rest
Regulatory & enterprise architecture alignment	Built to align with state security requirements & WV Office of Technology standards
Confidential document handling	Secure storage, version control, audit logs, restricted access, and approved workflows

The Solution: CardyCares Provider Management Solution

Our CC-PM is a cloud-hosted, mobile-responsive platform built on a configurable low-code framework. This enables WVBOM staff to manage and update workflows, forms, and license types in-house, minimizing long-term vendor reliance and supporting evolving policy or legislative changes. Self-service portals for licensees and applicants simplify interactions while improving turnaround time and transparency.

The CC-PM solution includes configurable modules that support:

- Initial **licensure and renewal workflows** for MDs, DPMs, and PAs;
- Centralized tracking of **complaints, investigations, and disciplinary actions**;
- **Document management** with secure uploads, version control, and audit trails;

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- **Customizable application forms** with logic-based branching and content reuse;
- Integrated **communications for notifications, reminders, and correspondence**.

Built with both regulatory and user experience in mind, the system makes sure WVBOM staff, board members, and applicants can securely access role-specific dashboards and complete tasks efficiently from desktop or mobile environments. The solution is WCAG 2.1 AA compliant, supports HIPAA and PII safeguards, and includes system monitoring, uptime guarantees, and performance SLAs.

Through built-in analytics and configurable reporting, the CC-PM platform empowers WVBOM with actionable insights, system-wide visibility, and future-ready scalability all while maintaining low total cost of ownership and high operational control.

Solution Overview
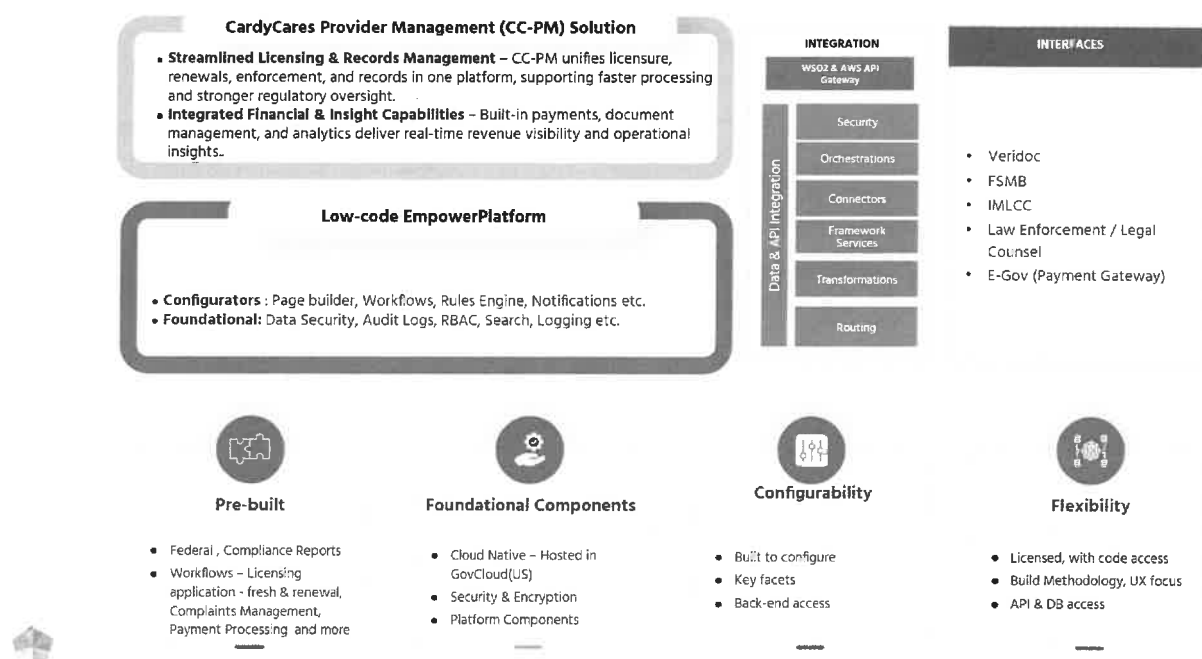
Figure 3: CC-PM Solution Overview

Cardinality's Low-code EmpowerPlatform

The **CC-PM solution** is built on **EmpowerPlatform**, a low-code framework purpose-engineered for government licensing and regulatory programs. It includes configurable modules for provider management, licensing, compliance tracking, case management, portals, analytics, security, and reporting, each optimized to support **WVBOM's operational workflows and regulatory requirements**.

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Low-code EmpowerPlatform
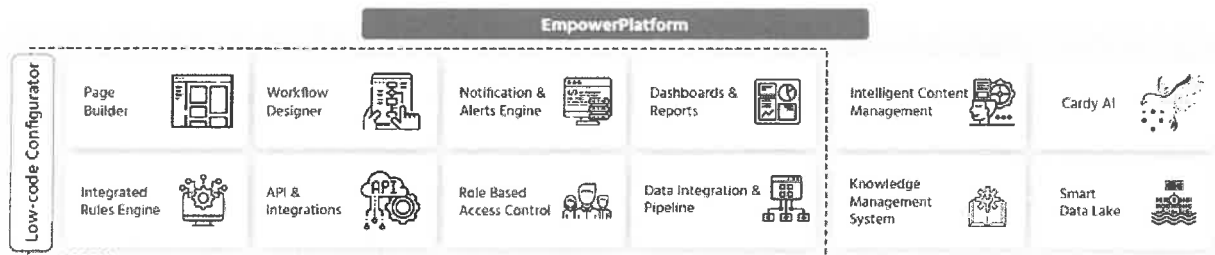Foundational Services, Configurability & Flexibility

Figure 4: EmpowerPlatform Components

Brief overview of the low-code tools is given below:

- **PageBuilder for Configurable Forms:** Enables authorized users to create, modify, and publish dynamic forms without coding. Using an intuitive drag-and-drop interface, WVBOM staff can configure data fields, layouts, conditional logic, and validation rules to support a wide range of licensing processes. Examples of forms that can be built and maintained include:

  - ❖ **New license applications** for physicians, podiatric physicians, and physician assistants
  - ❖ **Renewal applications** with CME attestation fields, disciplinary disclosures, and updated checklist items
  - ❖ **Facility registration or change-of-information forms** for hospitals, clinics, and health systems
  - ❖ **Document submission forms**, allowing applicants or providers to upload supporting documentation such as transcripts, malpractice forms, or training attestations
  - ❖ **Complaint submission forms** for public users, incorporating structured fields to standardize intake
  - ❖ **Supplemental forms** such as supervision agreements, training verifications, or corrective action follow-up documentation

To accelerate form creation, PageBuilder allows users to **duplicate existing forms** and modify only the required fields supporting rapid rollout of new or revised forms when statutory or regulatory updates occur. Reusable components such as applicant identification fields, address blocks, or license-type selectors can be inserted into multiple forms, reducing configuration effort and promoting consistency across the system.

The PageBuilder library includes a wide range of field components **text fields, dropdowns, radio buttons, checkboxes, date selectors, file uploads, signature blocks, and conditional sections**. These components support different licensing scenarios; for example:

- **Dropdowns** for license type selection, specialty areas, or state of training
- **Radio buttons** for yes/no disciplinary disclosures or eligibility questions
- **Checkboxes** for attestation statements (e.g., CME completion, truthfulness of information)
- **Date selectors** for graduation dates, training periods, or expiration dates
- **File uploads** for supporting documents required during application or renewal

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- **Conditional sections** that appear only when applicants indicate prior disciplinary history or foreign training

These configuration capabilities allow WVBOM to manage form updates independently, adapt quickly to changes in board rules or legislative requirements, and maintain a consistent, user-friendly application experience across all license types.

- **Workflow Designer:** Provides a visual, configurable tool to design and automate business processes. Users can define steps, conditions, and approval paths to reflect agency operations and support consistent case handling. For example, providers or applicants may submit licensure or enrollment applications that are reviewed by Licensing Staff to verify eligibility. The workflow engine can guide applicants through all required steps including application submission, background checks, document verification, supervisory review, and final approval while routing tasks to the appropriate staff at each stage.

Our current New York licensing project leverages similar workflows, guiding prospective applicants through the full statutory and regulatory licensing process. This includes initial inquiry, application completion, background check processing, verification of initial and annual training requirements, issuance of licensure decisions, and notices related to re-licensure, voluntary closures, or involuntary closures. These same configuration patterns can be applied to WVBOM to support medical licensure, facility registration, renewal cycles, and any multi-stage review process defined by the Board.

- **Rules Engine:** Allows non-technical users to define and modify business rules that control decision logic, eligibility criteria, and automated actions, reducing reliance on development cycles for policy or process updates. For WVBOM, these rules can support functions such as:

  - ❖ **Eligibility determination for specific license types**, including rules for medical school accreditation, residency completion, board certification requirements, or supervised practice thresholds.
  - ❖ **Background check and disciplinary screening**, such as automatically routing applications with certain disclosures to a secondary review queue.
  - ❖ **Renewal requirements**, including CME completion thresholds, timely submission rules, and automated late-fee calculations based on renewal date.
  - ❖ **Document validation**, where missing items (e.g., transcripts, training attestations, malpractice history forms) trigger automated routing back to the applicant with instructions.
  - ❖ **Conditional workflows**, such as requiring additional documentation for international graduates or routing certain facility applications for inspection review.

These configurable rules allow WVBOM to adapt quickly to regulatory changes, board decisions, and evolving licensing standards without requiring system redevelopment.

- **Dashboards and Reports:** Our solution provides real-time, role-based dashboards and configurable reports that help staff monitor performance, track workloads, and support data-driven decision-making. These dashboards surface both individual-level actions and broader operational trends. Examples include:

  - ❖ **Provider licensure monitoring:** Lists of providers with upcoming renewals, overdue renewals, or pending application actions.

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- ❖ **Compliance and oversight:** Flagged provider lists based on missing documents, background check issues, unresolved disciplinary items, or repeated deficiencies.
- ❖ **Operational efficiency metrics:** Average turnaround time for initial licensure, renewals, and disciplinary reviews, with the ability to drill down by license type, reviewer, or workload category.
- ❖ **Trend and barrier identification:** Macro-level visualization of bottlenecks such as geographic areas experiencing slower processing times, ecosystems where supporting documentation is frequently incomplete, or populations with repeated application gaps. These insights allow WVBOM to identify structural barriers and address them proactively.

- **Alerts and Notifications Engine:** The system supports automated alerts, reminders, and workflow notifications delivered via email, SMS, and in-app messages. Configurable rules allow WVBOM to manage time-sensitive tasks and multi-step review processes. For example:

  - ❖ **Application and renewal deadlines:** Graduated alerts can notify applicants 30 days, 7 days, 1 hour, and 30 minutes before expiration or submission deadlines.
  - ❖ **Multi-step review workflows:** When a licensing specialist completes their review and the next action is required, such as physician review, supervisory approval, or document verification, the system automatically notifies the appropriate user.
  - ❖ **Provider communication during review:** If required documentation is missing or clarification is needed, the licensing specialist can return the application to the provider with comments. The provider receives an alert and can submit the requested information directly through the portal.
  - ❖ **Status updates throughout processing:** Applicants and providers are informed when their application moves from submission to review, from review to approval, or when additional steps such as background checks or board actions are required.

- **API Configurator:** Provides a low-code interface for integrating external systems and services using secure RESTful APIs. Supports data exchange with financial systems, state portals, and third-party applications.

- **Learning Management System (LMS):** An integrated module for user training and knowledge sharing. Facilitates onboarding, skill development, and continuous learning through eLearning modules, quizzes, and progress tracking.

- **Role-Based Access Control (RBAC):** Implements fine-grained access control to restrict system functionality and data visibility based on user roles, maintaining compliance and data security with agency and state IT standards.

The CC-PM will be implemented using a hybrid agile delivery model, combining structured governance with iterative releases and continuous stakeholder engagement. Our approach includes a formal RAID framework (Risks, Assumptions, Issues, Dependencies) to proactively manage project risk, along with rigorous quality assurance practices to make sure each release is secure, stable, and aligned with program goals.

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CardyWay Implementation Methodology

An Innovative and Proven Methodology for GovTech Modernization

GovTech's biggest challenge is not technology; it is implementation. The CardyWay solves this with an AI-powered gap-based implementation methodology designed for government programs like West Virginia CC-PM, delivering speed, certainty, and trust.

This model acknowledges the constraints of current DDI (Design, Development & Implementation) models for Large Complex Govt modernizations.

- It is impossible to capture all requirements up front
- Most DDI models are inflexible, making changes expensive with significant impact to project timeline
- Current DDI models struggle to quantify/mitigate risks related to data migration and legacy system integrations, which causes significant delays and cost overruns

Key elements of the CardyWay Implementation model.

Gap-Based Sprints

- Start with Version 0 (v0) by Day 30 that addresses most program needs upfront
- Incrementally close gaps through sprint cycles (v0.1 → v0.2 → v1.0)
- Deliver faster time-to-value with transparent, low-risk progress every sprint

Scenario Lens

- Move beyond complete requirements up-front to data-driven scenario profiling
- Visualize actual system usage through intuitive heat maps
- Use historical data to identify gaps and opportunities to make informed modernization decisions

GovTech PM Copilot

- Transparent and reliable view of real project progress
- AI-powered status reports integrating data from Jira, GitHub with requirements, estimates, and defect tracking
- Bridges the gap between technical reality and stakeholder perception

AI Assistant for Audit and Validation

- Business leaders can get transparent project status, directly from the system metadata, without relying on people & reports
- Verify delivered pages, wired workflows, and implementation progress using the AI Assistant

Proof in Action

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"It took a while, and it wasn't easy to figure out The CardyWay. We failed and struggled, but we always learned and kept getting better. Now, we have proof it works. We're still fine-tuning it with every successful project, and now we're ready to share it with everyone." - **Cardinality**

Department of Human Services (DHS), Georgia – Communicare Portal: *"Georgia Communicare is going to be the bridge that helps foster parents and birth parents communicate."* – Kimberly Fowler, Georgia Parent Advisory Council
- 4 months to go-live
- Real-time communication across the child's entire circle of care
- Faster response times facilitated by nudges & alerts

Months 0-4	Months 4-6	Ongoing
Phase 1 rollout → core communication app	Scenario-driven feedback → refinements to the system & go-live	Quarterly releases to continuously improve efficacy & usage

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Department of Human Services (DoHS), West Virginia – Foster Parent Communication Software: *"I believe it can be a gamechanger for every aspect of child welfare, and I look forward to the full implementation as quickly as we can"* – Del. Adam Burkhammer, R-Lewis, a sponsor of the bill
- Less than 3 months to go-live
- Confidence in timeline from transparent status reports
- The CardyWay facilitated collaboration with the agency

Month 1	Month 2	Month 3
Quickstart using Cardy v0	Iterated to address WV DoHS specific needs	v1 go-live with core communication tools

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Department of Public Health (DPH), Georgia – Grants Management System: *"This project has enlightened me and the BSITF staff regarding new methodologies to ensure that our processes are both accurate and consistent across the different key domains we rely on to provide high-quality services to the citizens of Georgia"* - Craig L. Young, Executive Director
- Streamlined application, review, and distribution
- Addressed inefficiencies and enhanced operational transparency
- Secure and responsive platform for grant applicants

Month 1	Months 2-7	Month 8
Deployed Cardy v0 base solution in 30 days	Gap-based sprints to address DPH specific needs	Addressed data quality issues & v1 go-live

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San Mar Family & Community Services – Foster Care & Referral Management:
"The commitment of Cardinality to improve the lives of children, families, and communities makes all the difference in this difficult work we pursue every day." - Keith Fanjoy, CEO, San Mar Family and Community Services
- Streamlined referrals
- Improved data accuracy
- Faster compliance + reporting

Month 1	Months 2-5	Month 6
Partnership launched, leveraging foster care system v0 as the foundation	Gap-based sprints to address digital licensing, onboarding, and referral management	Migrate, verify data and go-live

The CardyWay: AI-powered implementation. Fast. Certain. Real.

Through the execution and successful delivery of this solution, WVBOM can expect to achieve:

Digital Transformation and Modernization

- **Comprehensive Digital Modernization**: Leverage our low-code platform, electronic document management system, and AI-powered automation to eliminate inefficiencies, reduce paper usage, and enhance customer service.
- **Cloud-Powered Efficiency**: Leverage AWS Government Cloud infrastructure and AI-driven analytics to enhance WVBOM operations, streamline licensing and renewal workflows, and deliver real-time data access improving decision-making, regulatory oversight, and service delivery for licensees and the public.
- **Faster, Cost-effective Implementation**: Get 80% of your listed requirements out-of-the-box, 20% met with configurations & customizations - supporting implementation on time and within the budget.

Enhanced Decision Making and Outcomes

- **Data-Driven Decision Making**: Nudges, Recommendations, and Insights powered by CardyAI, our responsible and explainable AI engine, improve & accelerate outcomes while being trustworthy.
- **Optimize Workload**: Real-time dashboards show caseworker workload, allowing for optimal resource allocation and prioritization of urgent cases. Automated nudges and reminders drive timely and effective actions and outcomes.

Efficient Case Management

- **Efficient Case Management**: Dynamic workflows by case type, automated data collection, case and person correlation, and pre-filled forms to reduce errors and improve efficiency.
- **Improved Caseworker Efficacy**: Accelerates caseworker adoption through an intuitive and AI-enabled interface, minimizing training needs. Additionally, features like speech-to-text, document digitization, and offline access enhance speed and convenience.
- **Accurate Data Entry**: Real-time validations, mandatory field indicators, and third-party address verification make sure that every piece of information is validated.

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Secure and Compliant Operations

- **Secure and Accountable**: FedRAMP-ready security standards, with strong data & API encryption methods and protocols. RBAC allows only authorized access, and a comprehensive audit trail framework maintains accountability.
- **Compliance Assurance**: Pre-built solution & workflows that meet Federal guidelines and FFP eligibility, with out-of-the-box reports and audit mechanisms for compliance.
- **Ownership and Control**: Own your configurations and data, stored in SQL-based data structures, with 100% access without dependency. Also, full access to source code for security reviews and emergency updates. No forced updates with our flexible deployment planning that involves the agency.

Configurability and Self-Service

- **Configurable and Modular Architecture**: Easily add or modify forms, workflows, preferences, role-based access controls, appearance, and more to fit your evolving needs. Integrates securely with other state of West Virginia external systems through APIs.
- **Self-Service Empowerment**: Secure portals for clients, providers, and legal resources offer streamlined access to case histories, essential documents, and support services, enabling children and families to stay informed and connected throughout their interactions with the agency.
- **Empower your Workforce with Out-of-the-Box KMS / LMS:** Cardinality's integrated KMS/LMS fosters continuous learning and provides immediate access to critical knowledge, keeping your team skilled and informed.

Cardinality Project Staffing Approach for CC-PM Implementation

Cardinality is committed to assembling a highly capable, multidisciplinary team to support the successful implementation of the **CardyCares Provider Management (CC-PM)** solution for the West Virginia Board of Medicine. Our staffing model reflects the technical, functional, and operational scope outlined in the Board's RFP, providing comprehensive support across the entire system lifecycle.

Our implementation team is composed of experienced former HHS leaders, subject-matter experts, and a skilled group of technical, support, and project management professionals.

Kevin Jones, former CIO of the Indiana Department of Child Services and now serving as the CSO of Cardinality, brings his 20+ years of HHS/GovTech experience to serve as the Contract Executive for this project.

Kevin's seasoned leadership provides delivery oversight and mentorship; facilitating the right services and interventions for those most in need when they need them most is always a priority. He evangelizes the use of technology to better solve these problems and to utilize AI in case management notes to more efficiently identify keywords tagged by your agency, enhancing the human loop and allowing caseworkers to better prioritize their limited time.

Kevin is ably supported by:

- **Kera Morelock, Health Care SME,** offers more than 20 years of professional experience in healthcare, case management, disease management, and regulatory quality oversight. Her background includes direct service provision and program management, coordination of care

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across diverse populations, development and monitoring of quality and compliance programs, and collaboration with providers and regulatory agencies. This experience positions her to contribute practical, operations-informed perspectives to system design, workflow planning, and user-centered solution configuration.

- **Stacy Night, Project Manager at Cardinality,** is a seasoned public sector consulting leader with over 36 years of experience delivering enterprise technology solutions, program management, and solution architecture for state and local government clients. Specializes in IT modernization, legacy system migration, and implementation of SaaS, COTS, and custom solutions across child welfare, workforce development, licensing, and labor systems.

- **Josh Coats, Development Lead at Cardinality -** An engineering leader with 17 years of software development experience and 9 years managing and scaling engineering teams to deliver secure, high-impact web and mobile platforms. Specializes in software security, cloud architecture, and compliance frameworks (SOC 2, HIPAA, FedRAMP), leading implementation of security controls, risk management, and DevSecOps practices to ensure data protection and system integrity.

- **Chanakya, Solution Architect at Cardinality -** A software professional with over 15 years of experience in architecting, designing, and deploying enterprise solutions. Specializes in cloud migration, digital transformation, and low-code platforms, with deep expertise in multi-cloud architecture, CI/CD automation, and microservices modernization. TOGAF and Microsoft Azure certified.

Value Proposition: CardyCares – Provider Management (CC-PM)

By partnering with Cardinality, WVBOM will gain access to a proven, scalable licensure management solution that streamlines credentialing workflows, strengthens regulatory oversight, and aligns with both operational needs and compliance standards. Our CardyCares Provider Management solution enhances licensing service delivery through a modern, configurable platform supported by successful implementations for state agencies in Georgia, Maryland, and Indiana, and current projects underway in West Virginia, New York, Nevada, Hawaii, and Oregon.

- **AI-Powered Functionality (with human accountability):** The CC-PM solution includes explainable AI capabilities to assist users without removing decision-making authority. AI is applied responsibly to improve document classification, workflow routing, and insights while maintaining human validation.
- **Configurable & Adaptable (no vendor lock-in):** CC-PM eliminates dependency on developers for ongoing changes. West Virginia Board of Medicine staff can reconfigure rules, workflows, templates, and user settings without source code modification, allowing rapid adaptation to evolving policies and requirements.
- **User-Centered Design:** CC-PM is purpose-built for daily use by licensure administrators, credentialing staff, board members, and applicants. It features intuitive navigation, role-specific dashboards, embedded guidance tools, and contextual help reducing training time and promoting faster adoption across user groups.
- **360° Matter and Client View with Data Sharing:** The CC-PM data model captures a complete view of applicants, credential types, licensing timelines, communications, payments, and

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documentation. It supports secure role-based access and complies with WVBOM's data privacy requirements, enabling efficient operations and inter-agency data sharing when needed.

- **Compliance-Ready and Integration-Enabled:** Hosted on AWS GovCloud, CC-PM meets FedRAMP, NIST 800-53, and County data governance standards.

Through CC-PM, Cardinality delivers a solution that empowers the WVBOM with operational agility, real-time insights, and comprehensive licensing and credentialing management, helping the Board achieve its modernization goals with speed, security, and reliability.

Cardinality is prepared to enter into a contract based on this submission and is enthusiastic about partnering with the West Virginia Board of Medicine. We are committed to advancing your regulatory operations through a scalable, secure, and sustainable CC-PM solution and look forward to being a trusted technology partner.

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3.   Project Goals and Proposed Approach (RFP Section 4.2.1)

The **CardyCares Provider Management (CC-PM) Solution** includes a **secure, cloud-based Enterprise Document Management System (EDMS)** that centralizes all document and media storage, supports advanced access control, and integrates smoothly with the WVBOM database and licensing workflows. This ensures that all records, evidence, and supporting documentation associated with applications, renewals, disciplinary actions, and board operations are managed securely and efficiently within a single environment.

Proposed Technical Solution and System Architecture

The CardyCares Provider Management (CC-PM) solution is designed to deliver a secure, scalable, and future-ready system tailored to the State's licensing and provider management needs. Built on a cloud-native, microservices architecture and hosted within AWS GovCloud (US), the solution emphasizes modular design, high availability, performance, and operational resilience. It integrates modern technologies, robust identity and access controls, and DevSecOps best practices to support continuous delivery, real-time analytics, secure data exchange, and continuous interoperability with both internal and external systems. This section outlines the solution architecture and key architectural components, deployment strategies, and technical safeguards that form the foundation of the proposed solution.

Solution Architecture

Cardinality proposes the CardyCares Provider Management (CC-PM) Solution to support the modernization of the West Virginia Board of Medicine's Medical Licensure and Records Management System. The proposed solution is grounded in the Empower Platform, an enterprise-grade low-code platform specifically designed to meet the evolving operational needs of government agencies. It is designed to support scalability, flexibility, and continuity of operations while enabling efficient delivery of key business functionalities across medical licensure, enforcement, and records management workflows.

The CC-PM Solution is designed with a modular and layered architecture to promote operational efficiency, adaptability to changing program requirements, and alignment with the State's strategic goals for modernization. It separates the presentation, business logic, data, integration, and security components into distinct architectural layers, thereby allowing targeted upgrades, focused enhancements, and agile response to future policy or regulatory shifts.

The below **Figure 5** presents the solution architecture for the CC-PM solution.
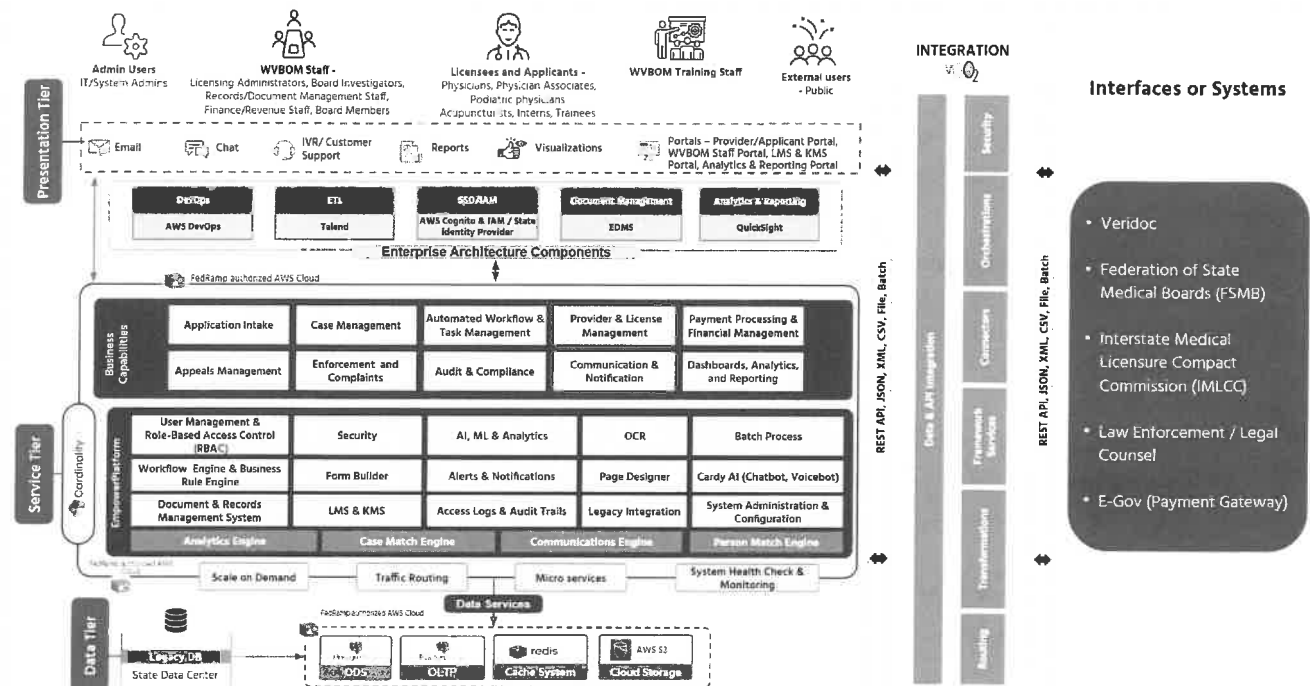
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Figure 5: CC-PM Solution Architecture

At its core, the architecture supports all major user groups involved in the licensure and regulation processes, including internal Board of Medicine staff, legal counsel, law enforcement partners, medical providers, out-of-state compact licensees, and affiliated third-party institutions. The platform supports public-facing, role-based access with self-service capabilities for providers while facilitating robust internal workflows for review, approval, compliance, and investigation.

The CC-PM solution offers out-of-the-box capabilities that align with the Board's business requirements, including application intake, document submission, workflow routing, credential verification, case tracking, communications, payment processing, and decision documentation. The embedded workflow engine and business rules management framework enable agency staff to configure licensing, enforcement, or investigative workflows without dependency on developers or manual processing.

The architecture is equipped to integrate with all key external systems and partners referenced in the RFP. This includes:

- **Veridoc** – for digital credential verification and license authentication;
- **FSMB (Federation of State Medical Boards)** – for board actions, licensure history, and credential exchange;
- **IMLCC (Interstate Medical Licensure Compact Commission)** – for managing compact license data and applications from out-of-state physicians;
- **Law Enforcement / Legal Counsel** – to support case tracking, status reporting, and information exchange during investigations or disciplinary actions;
- **Payment Gateway (West Virginia State Treasurer's Office (WVSTO) EGov system)** – to support fee collection, renewal transactions, and financial reconciliation workflows;

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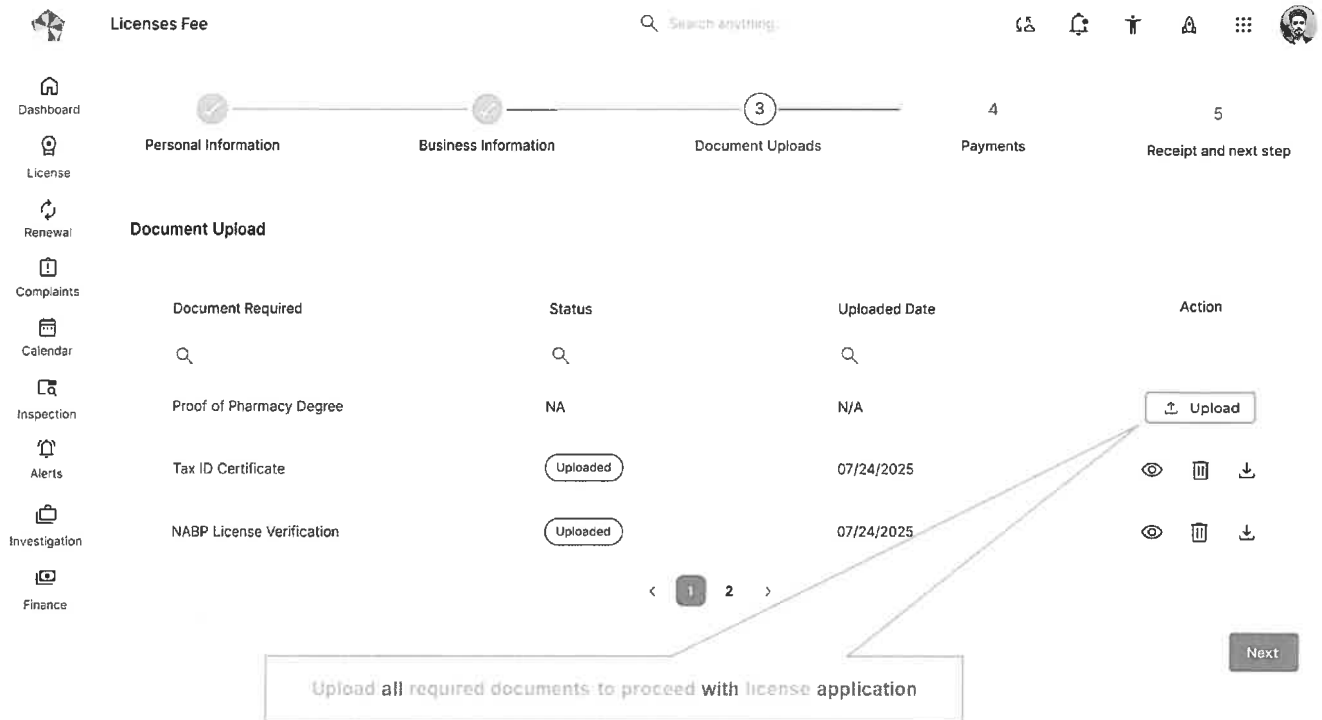
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The Empower Platform's built-in enterprise document management, knowledge repository, notification engine, ticketing system, and learning management capabilities collectively provide a comprehensive operating environment for the Board. The platform also includes integrated OCR tools, a page/form builder, machine learning-based analytics, and a virtual assistant to streamline staff and provider interactions.

This modern architectural foundation positions the Board to transform and strengthen its regulatory operations through a centralized, integrated, and adaptable digital environment, while continuing to meet its statutory obligations and service expectations across the medical community and public stakeholders.

Modules and Business Functionalities Supported

The CC-PM solution supports a modular structure to meet the diverse operational and regulatory needs of the Board of Medicine. Each module is purpose-built to support the Board's operational responsibilities, stakeholder interactions, and regulatory mandates. Major modules and their supported functionalities include:

1. **Application Intake:** The Application Intake module enables the Board to manage applications for **initial licensure, compact licensure, and renewal** for various provider types. It provides configurable online application intake, dynamic form generation based on license type, document uploads, educational and work history capture as shown in **Figure 6**. Applicants are guided through structured application steps, with the ability to save and return to their progress. Submissions trigger automated notifications to designated staff for further review. Internal workflows support routing to the appropriate reviewers and automate decision-making steps, based on configurable business rules. The module also supports **processing of endorsement and reactivation applications**, including comprehensive history tracking. The module integrates with external verification services such as FSMB and Veridoc to prepopulate or verify application data.
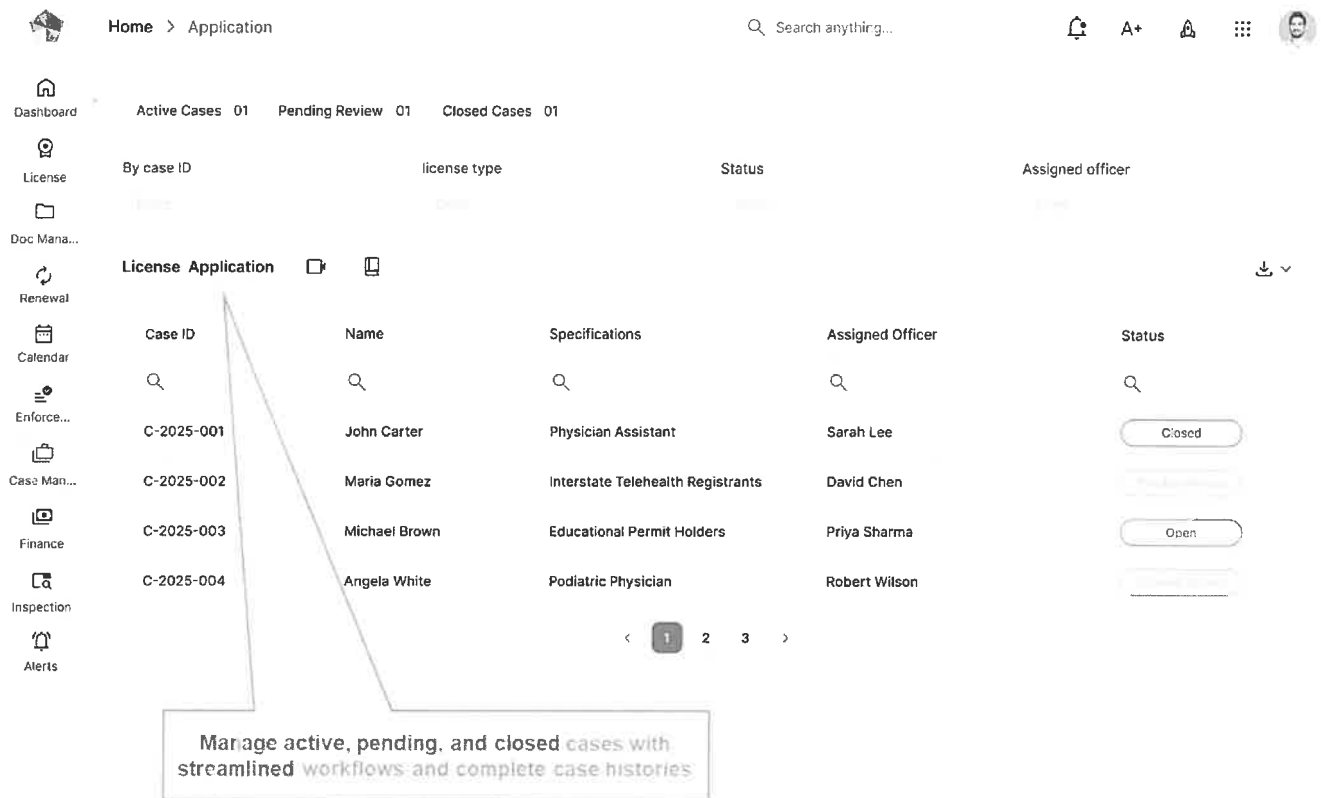
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Figure 6: Application Intake Document Upload Screen

2. **Case Management:** As shown in **Figure 7,** this Case Management Module facilitates the tracking and management of **licensing and disciplinary cases** throughout their lifecycle. Case workflows are configurable to accommodate Board-specific policies. Staff are able to view case histories, update statuses, manage communications, and attach relevant documentation.

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Figure 7: Manage & Tracking Cases

3. **Workflow and Task Management:** CC-PM supports dynamic business process workflows that reflect the Board's licensing and enforcement policies as shown in **Figure 8**. Each workflow stage from application intake to approval or enforcement can be configured with rules, conditional logic, and parallel processing. Tasks are generated and assigned to staff with role-based visibility, workload balancing, and escalation mechanisms. A dynamic workload management feature supports **auto-assignment of cases based on staff availability, role, or current caseload**, promoting operational efficiency and balanced work distribution.

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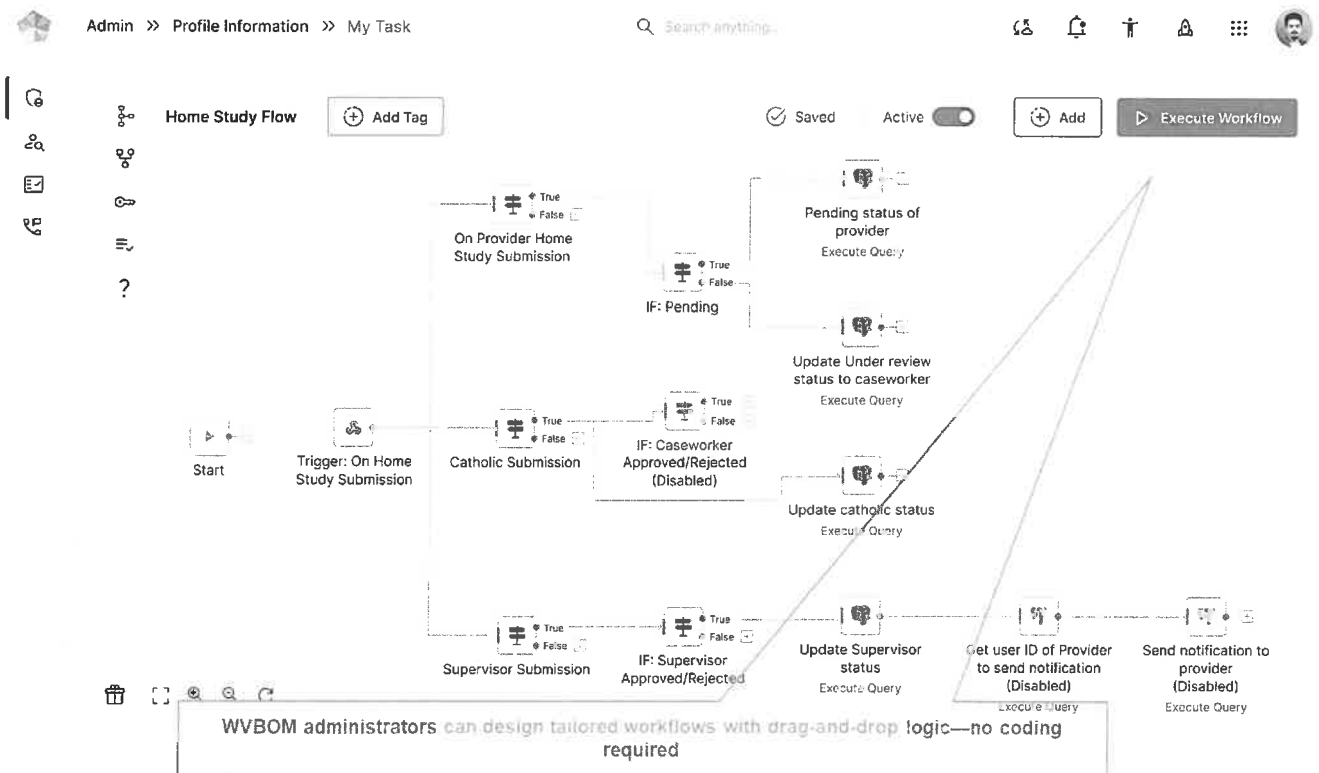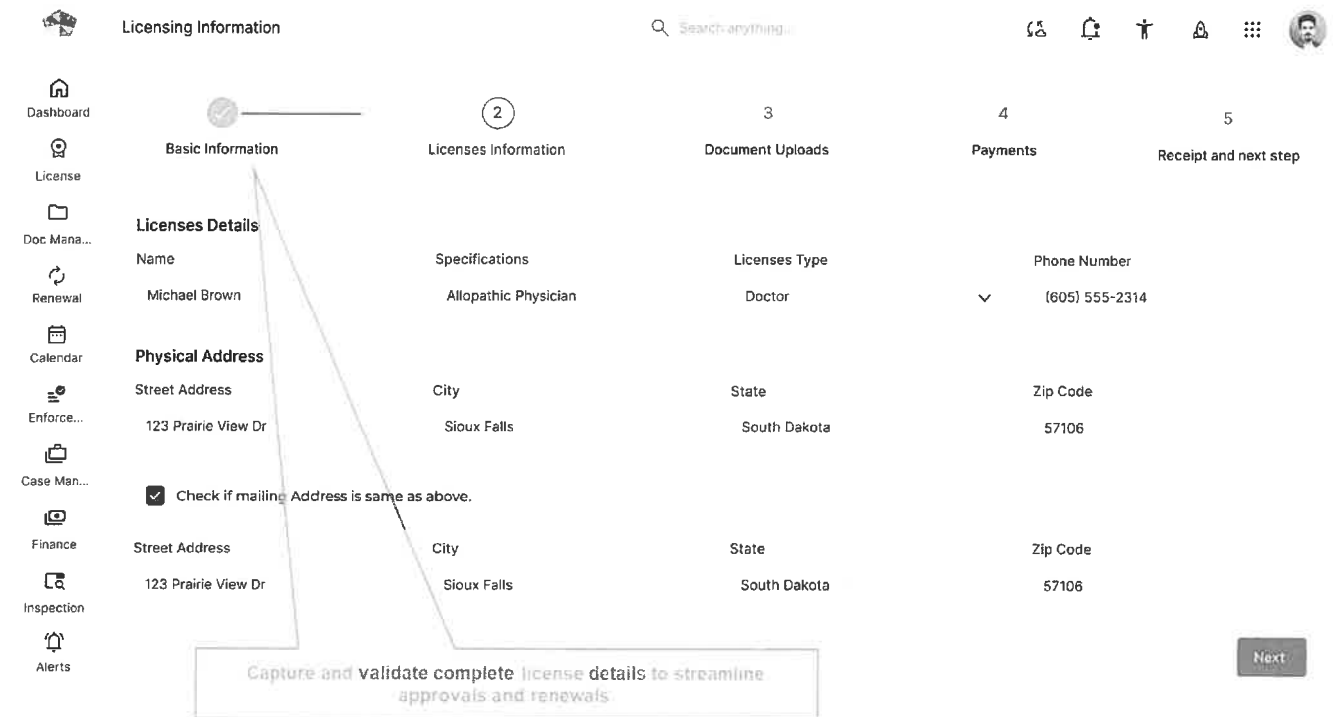
Figure 8: Workflow Engine Screen

4. **License Management:** Supports issuance, renewal, expiration tracking, suspension, and revocation of medical licenses. Licenses are associated with individual profiles, and license data is accessible via a centralized dashboard. License statuses(e.g., active, retired, inactive) are updated in real-time and made available to public-facing license look-up systems as shown in **Figure 9 & 10**. Licensing timelines and rule enforcement are configurable. This module also integrates with Veridoc, FSMB, and IMLCC for credential sharing and verification workflows, that supports compact licensing and cross-jurisdictional mobility.

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Figure 9: License Management Screen

Figure 10: License Renewal Screen

5. **Enforcement Management:** The Enforcement module provides a centralized environment for tracking complaints, investigations, and disciplinary actions as shown in **Figure 11 & 12**. It allows staff to log complaints, associate them with licensee records, conduct investigative reviews, assign tasks, and document findings. This module supports legal review workflows, generates hearing notices and board orders, and manages sanctions, restrictions, or revocations. It also facilitates
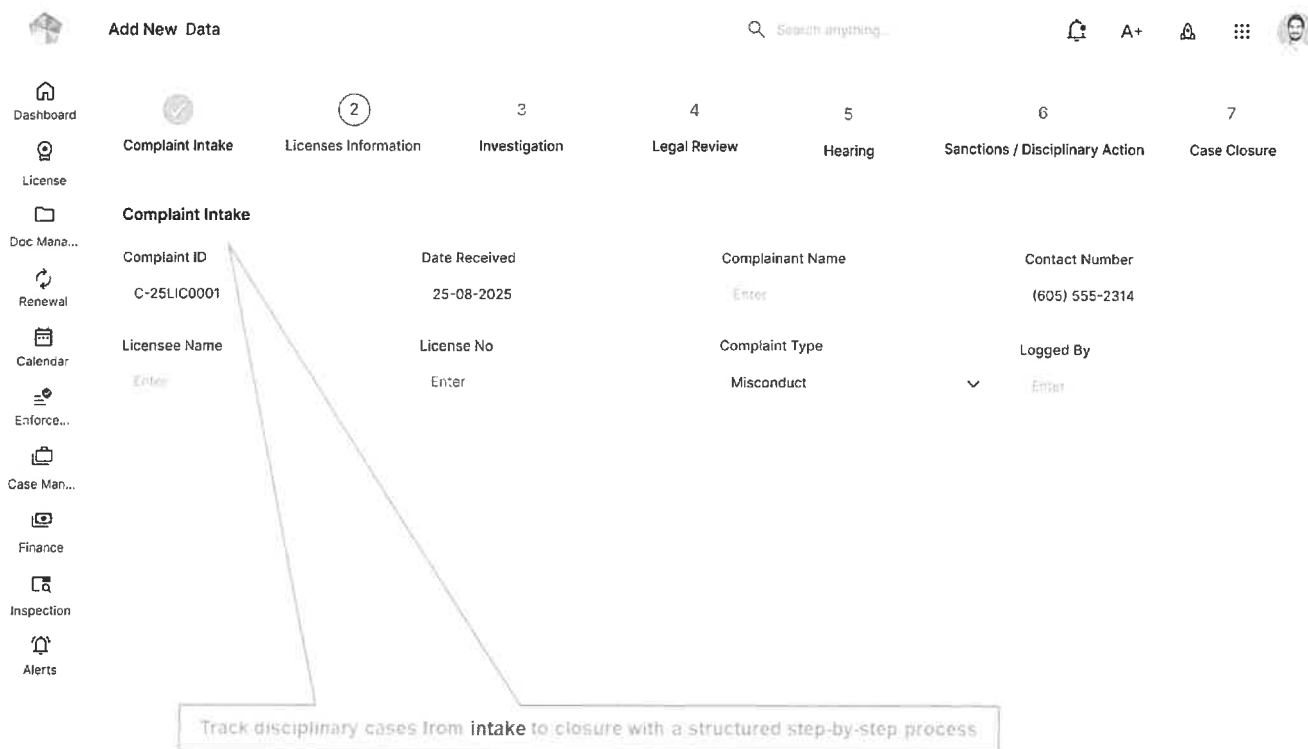
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communication and secure information exchange with legal counsel and law enforcement entities, maintaining a full audit history for each case

Figure 11: Manage & Tracking Complaints Screen

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Figure 12: Complaint Screen Intake Screen

6. **Document and Records Management:** All documentation and official records related to licensure, renewals, investigations, and compliance are maintained within the Document Management module as shown in **Figure 13**. This includes provider-submitted materials, board-generated correspondence, disciplinary decisions, and scanned legacy files. Integrated OCR, tagging, and indexing capabilities enable classification and fast retrieval. Record retention and archival rules are configurable to align with state policies and statutory mandates. Enables secure uploading, versioning, storage, and retrieval of documents. Role-based access restricts sensitive content to appropriate users. The system supports integration with enterprise content management systems or may store documents in an encrypted cloud-based repository with retention policy enforcement

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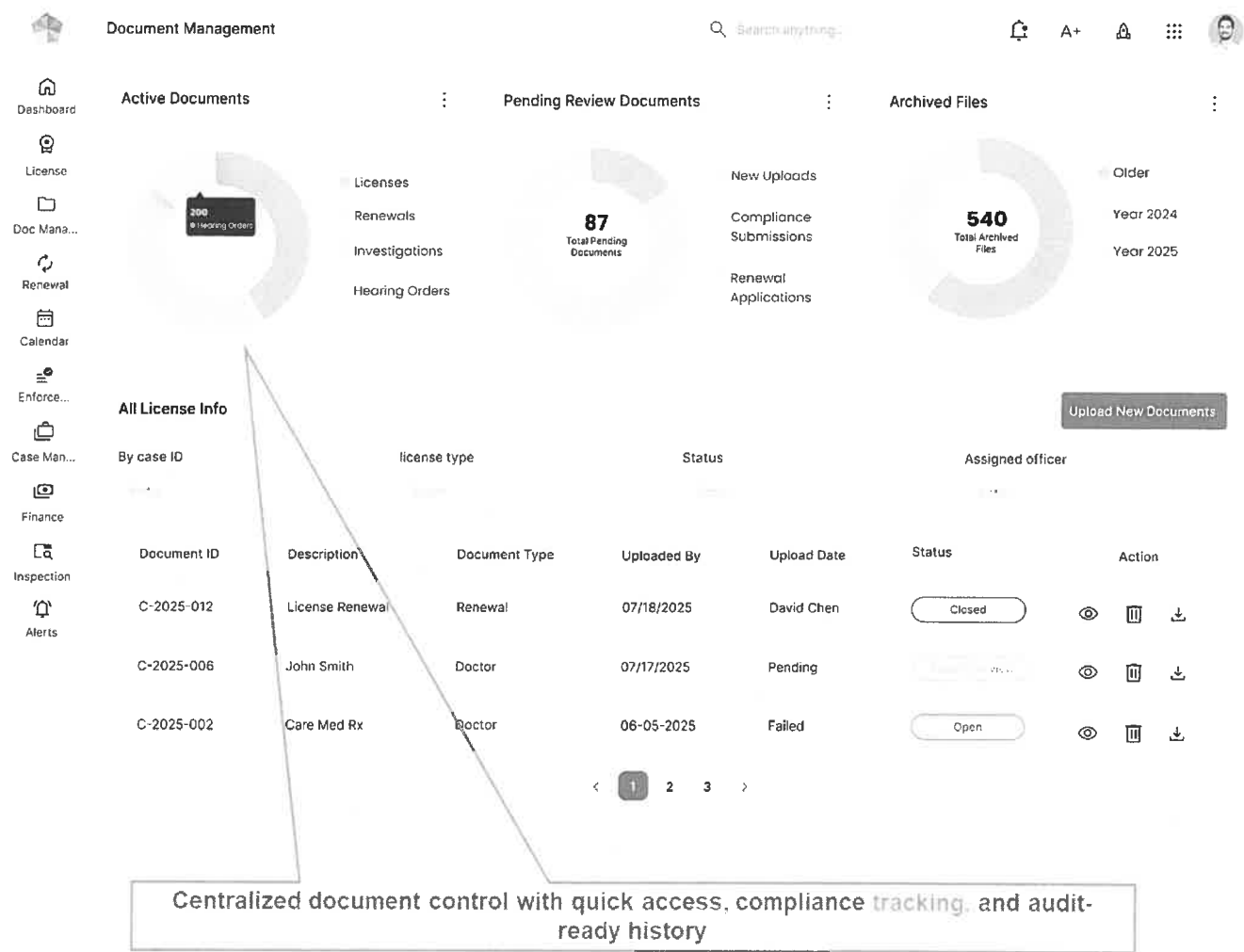
Figure 13: Document & Records Management Screen

7. **Payment Processing and Financial Management:** Integrated with the **State's E-Gov payment gateway**, this module supports the collection of application fees, license renewal payments, penalties, and other transactions. It handles configurable fee schedules by license type, invoice generation, transaction tracking, and reconciliation reporting as illustrated in **Figure 14**. Supports payment reconciliation, refund workflows, financial and audit reporting. Transactions are logged against individual applications or licenses, enabling traceability and auditability. Financial data is exposed for export or integration with external state financial systems as needed.

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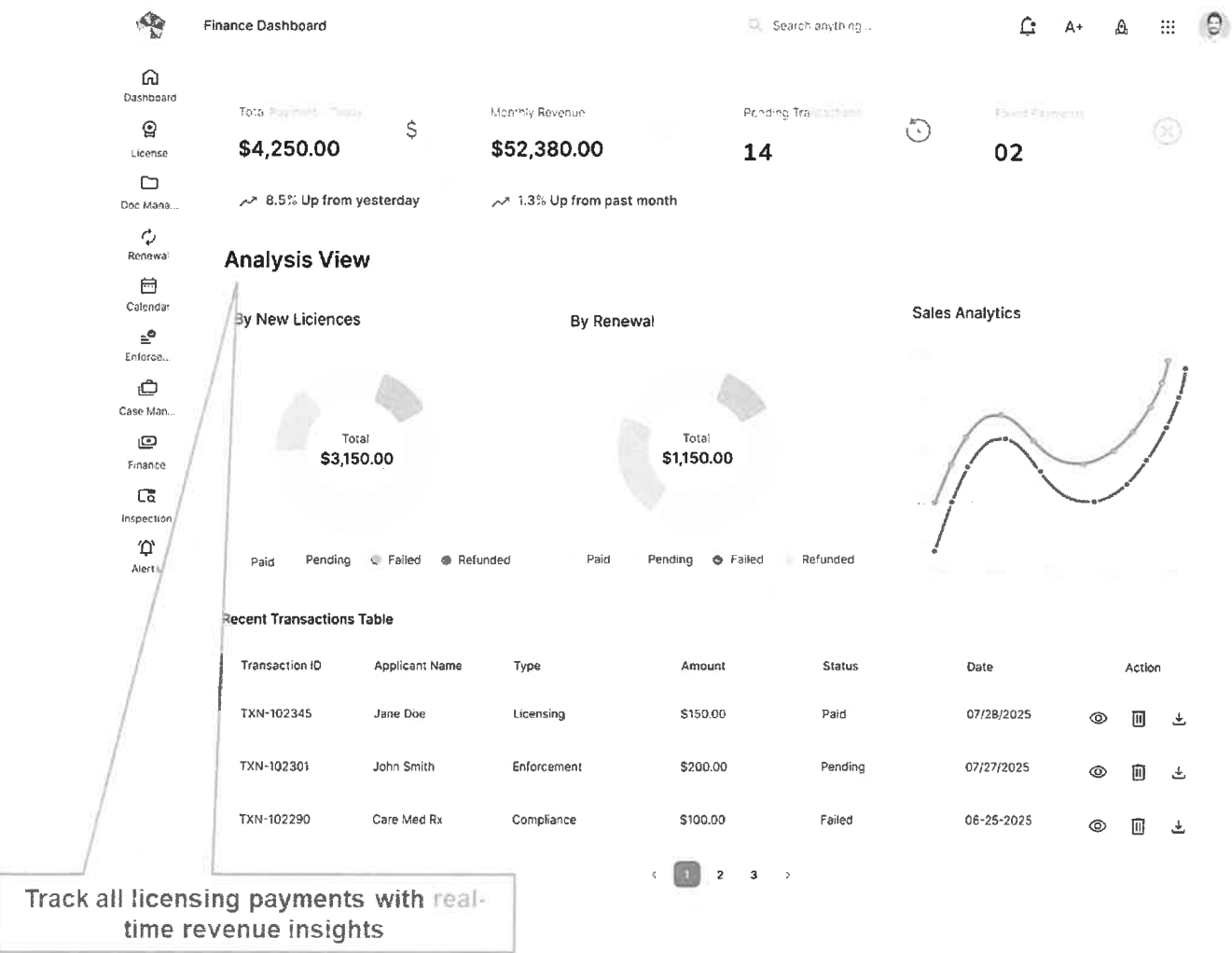
Figure 14: Payment Processing & Management Screen

8. **Appeals Management:** The Appeals Management module as shown in **Figure 15**, supports the end-to-end tracking and adjudication of appeals submitted by applicants or licensees in response to adverse decisions such as license denials, suspensions, or disciplinary actions. The module allows authorized users to log, categorize, and review appeals, attach supporting documentation, manage deadlines, assign appeal officers, and track decisions and outcomes. Integrated workflow automation notifies relevant parties of pending actions, escalations, and final determinations. The module supports integration with external legal counsel, state attorneys, or law enforcement systems when further investigation or hearings are required. Role-based access controls and a full audit trail are maintained throughout the appeals process for transparency and accountability.

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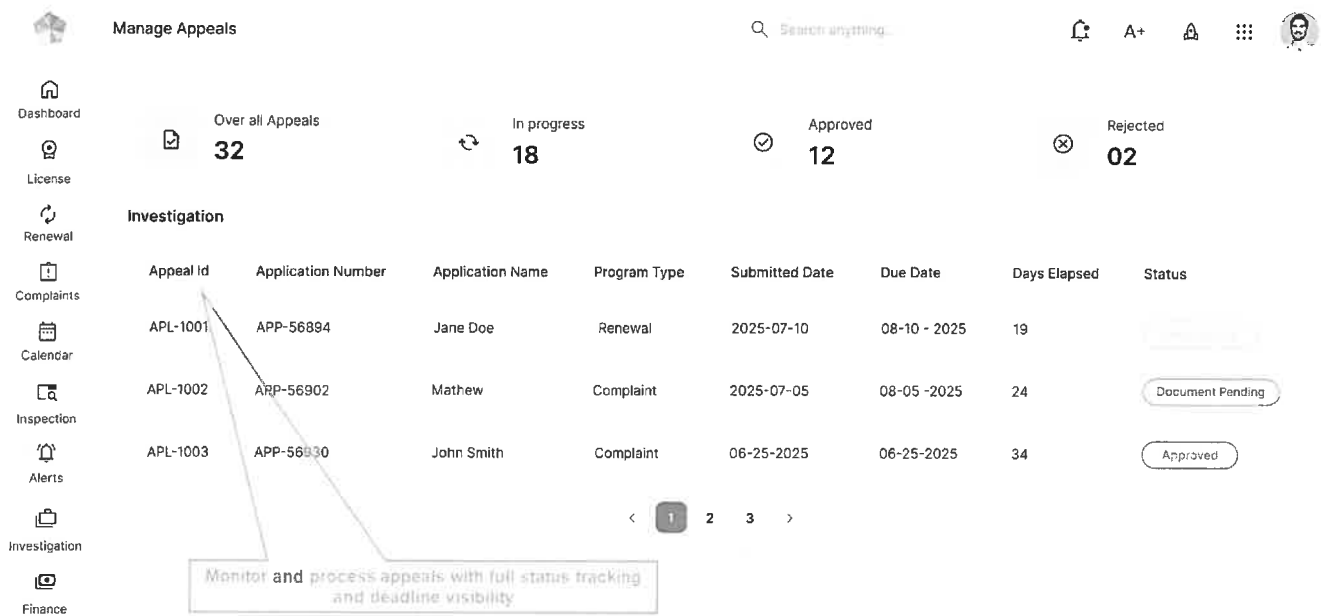
Figure 15: Appeals Management Screen

9. **Reporting and Analytics:** The Reporting module includes pre-built operational, compliance, and performance reports as well as ad hoc reporting tools. Authorized users can generate standard or ad hoc reports, filter data based on parameters. As illustrated in **Figure 16**, It supports exporting data in multiple formats and includes role-specific visual dashboards for tracking licensure volumes, processing timelines, caseload distribution, enforcement outcomes supporting informed decision-making. Integrated business intelligence/ analytics tools such as AWS QuickSight support trend analysis and policy review.

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Figure 16: Reporting & Analytics Screen

10. **Audit & Compliance Module:** This module tracks regulatory compliance of licensees and flags cases requiring audits or additional documentation. It captures actions such as **Continuing Medical Education (CME) audits**, peer review findings, and reporting obligations under state or national mandates.

11. **Communication & Notification Module:** Facilitates internal and external communication through system-generated emails, system alerts, and secure messages(SMS). Communication templates are configurable, can be triggered by workflow events (e.g., license issued, renewal due, complaint filed) and sent to applicants, providers, legal counsel, or third-party stakeholders. Notifications are automatically triggered by status changes, deadlines, incomplete applications, expiring licenses, missing documentation or submitted documents. Time-stamped message logs are preserved within each case or license record as shown **Figure 17**.

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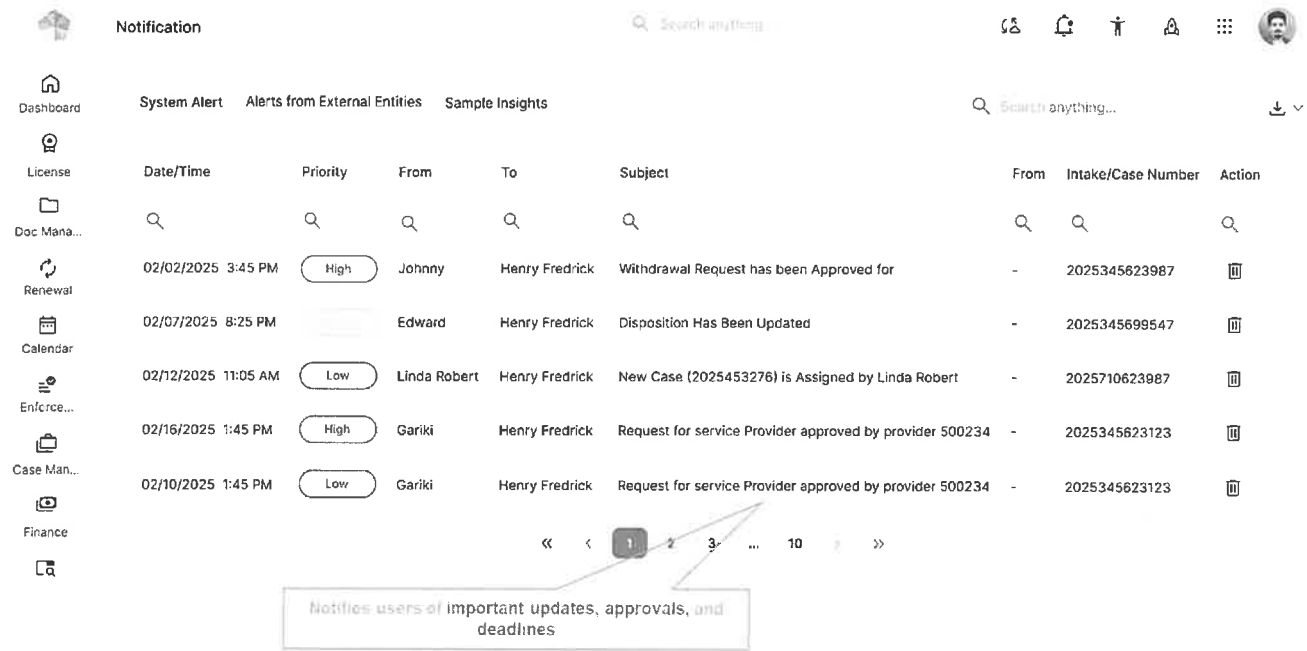
Figure 17: Notifications Engine Screen

12. User and Access Management: This module manages all user roles, permissions, group assignments, and access controls for both internal and external users. It integrates with the State's identity provider (e.g., Entra ID or Azure AD) to support Single Sign-On (SSO), role inheritance, and multi-factor authentication. Role Bases Access(RBAC) are granular and audit trails are maintained for access events as shown in Figure **18 & 19**.
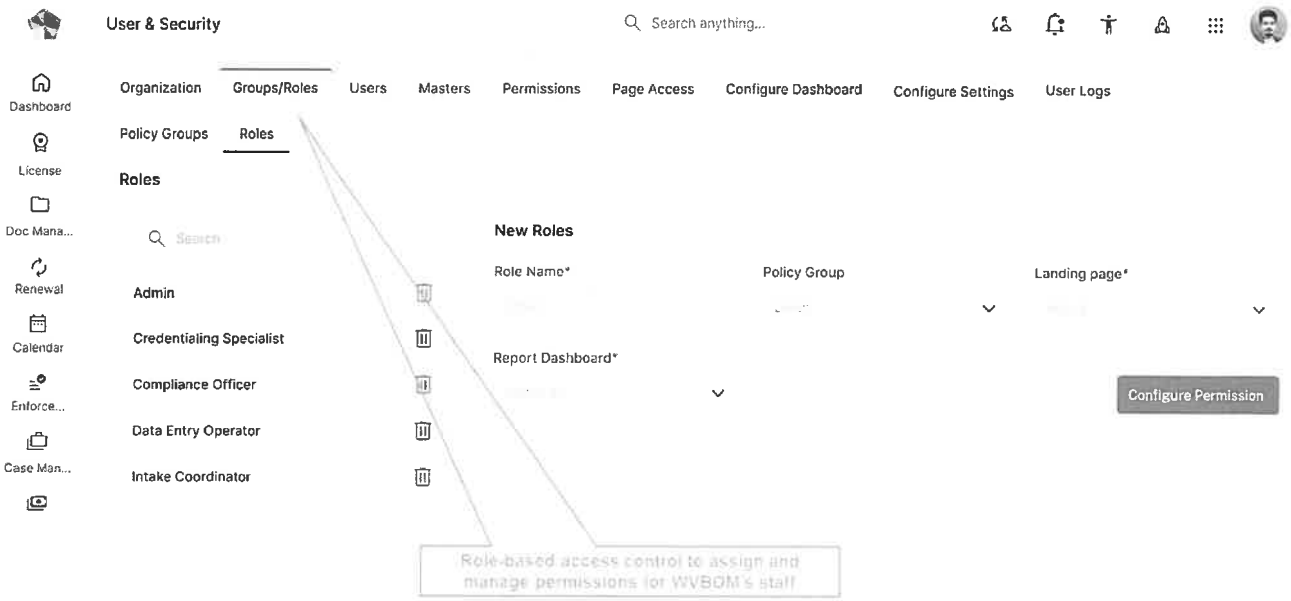
Figure 18: RBAC to Assign and Manage Permission Screen

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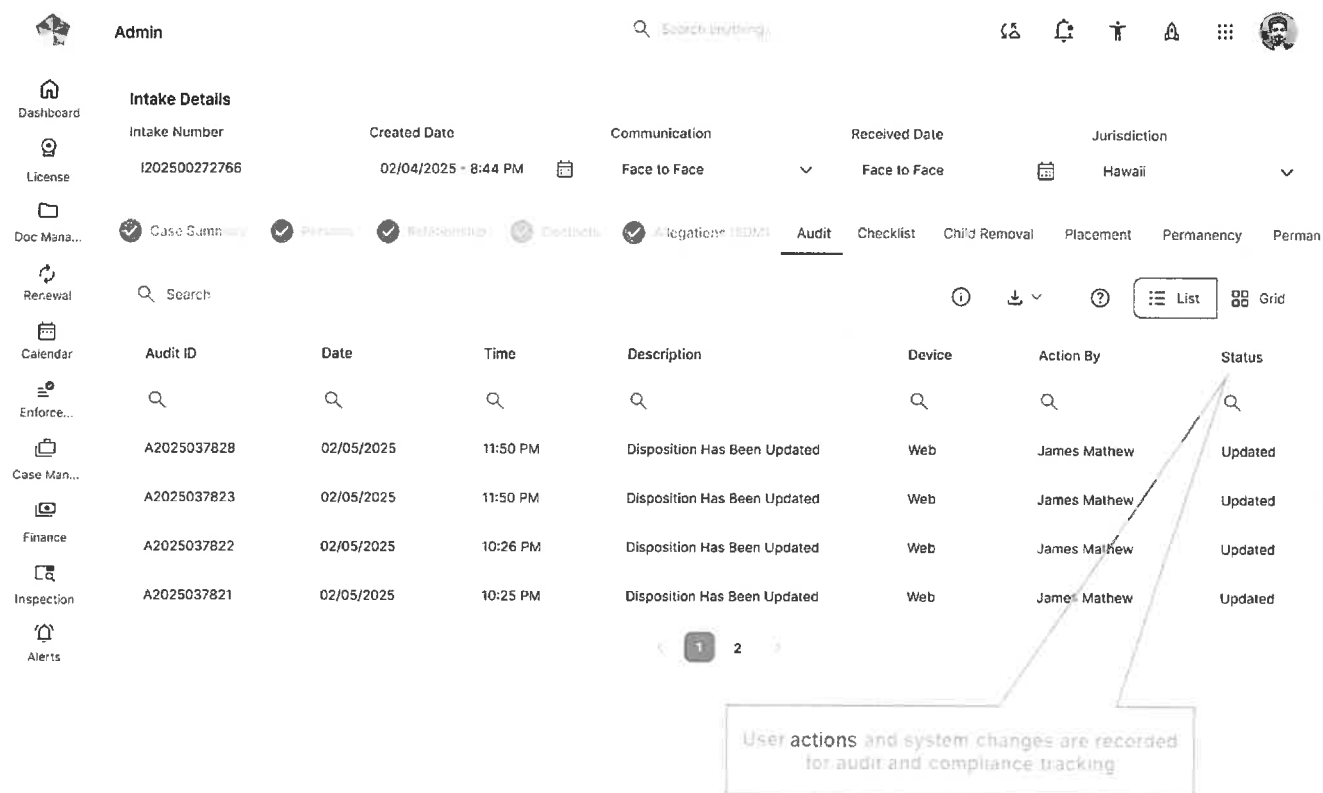
Figure 19: New User Adding Screen with RBAC

13. **Access Log & Audit Trails:** As shown in **Figure 20**, tracks user activities, system events, data changes, and workflow transitions for audit purposes. The module supports compliance requirements by maintaining historical logs and access trails. It also generates reports required for internal and external audits, including those mandated by regulatory and legislative bodies.

Figure 20: Audit Trails Screen

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14. Knowledgebase and Help Center: This module provides centralized access to FAQs, licensing requirements, instructional guides, and self-help resources for applicants and providers. Content is searchable, categorized, and manageable by Board staff as shown in **Figure 21**. It supports multilingual display and is compliant with accessibility standards.

Home

Video
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4 Categories, 9 Contents

Knowledge Management System

A Knowledge Management System (KMS) is a technology-based system or platform used to capture, store, organize, share, and retrieve knowledge to enhance efficiency, collaboration, and decision-making within an organization.

FAQ
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1 Categories, 10 Contents

Documentation
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2 Categories, 7 Contents

Centralized Knowledge Management System for agency policies, user guides, and reference materials

Figure 21: Centralized KMS Screen

15. Advanced Search Capabilities: The CC-PM solution includes robust **Advanced Search Capabilities** designed to support fast, flexible, and configurable information retrieval across all modules and data types. These capabilities extend beyond simple keyword searches to offer multi-criteria filtering, faceted navigation, and support for phonetic and partial text matching. Users can construct complex queries using configurable search parameters such as name, license type, status, submission date, credentialing milestones, case stage, document metadata, and other domain-specific fields. The search engine is built on top of optimized indexing strategies enabling high-speed lookups across structured and unstructured data. This includes support for searching within document contents (via OCR integration), audit logs, communications history, and relational data across modules (e.g., licensee linked to multiple cases or appeals).

These modules collectively support the full scope of the Board's mission and regulatory obligations while streamlining operations, promoting accountability, and enhancing service delivery to providers, public users, and partner agencies.

Empower Platform Capabilities

Empower Platform provides a configurable, extensible, and user-centric foundation that accelerates implementation timelines, promotes agility in adapting to policy and regulatory changes, and strengthens service delivery for both internal users and external stakeholders.

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1. **User-Centric, Accessible Interface:** At its core, the Empower Platform offers an intuitive user interface compliant with WCAG 2.1 AA accessibility standards, promoting inclusive and equitable access to all users, including those with disabilities. It supports robust forms management, workflow automation, business rules processing, and embedded analytics, all orchestrated through a flexible microservices architecture hosted in AWS GovCloud (US).

2. **Workflow Engine and Business Rule Engine:** Empower Platform's built-in **Workflow Engine** (powered by n8n) and **Business Rules Engine** (powered by Drools) enable dynamic and policy-driven automation of business processes as shown in **Figure 22**. Agencies can configure complex, multi-step workflows through a low-code interface, reducing administrative burden and expediting turnaround times for licensing, renewals, complaints, investigations, and more.
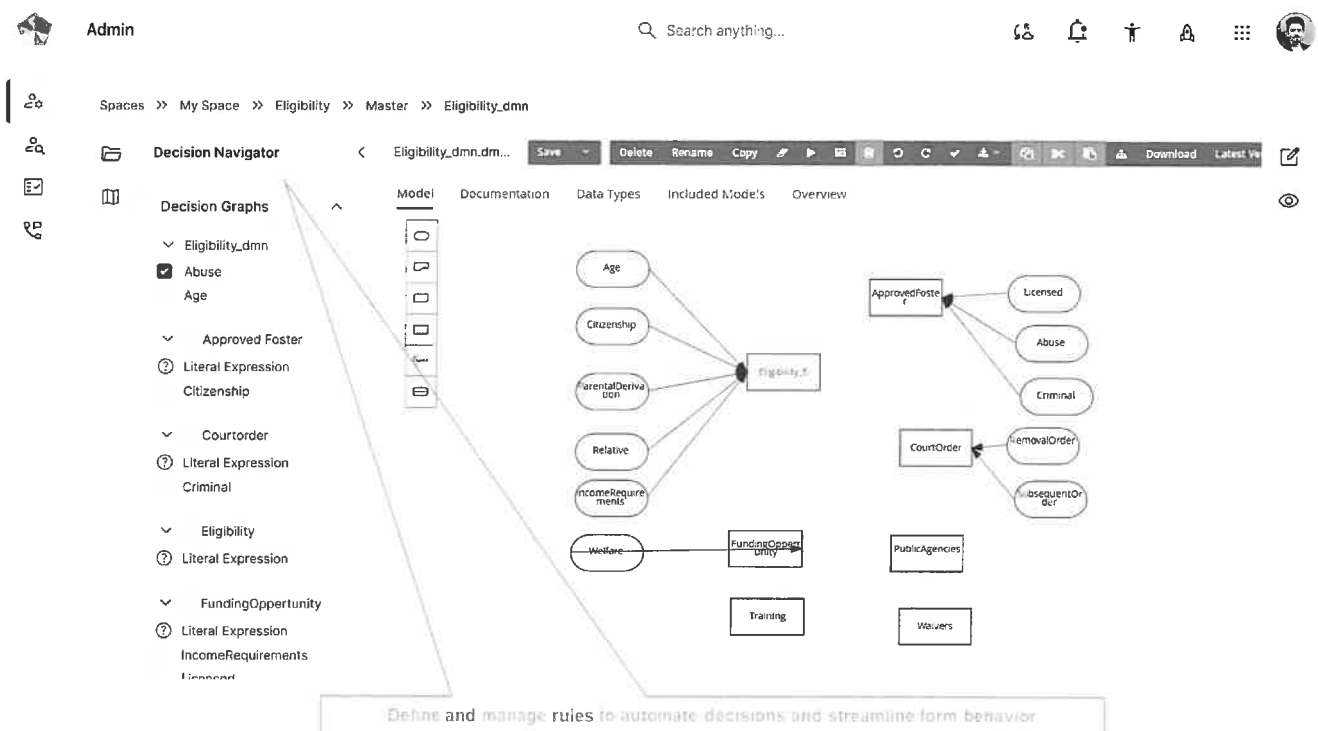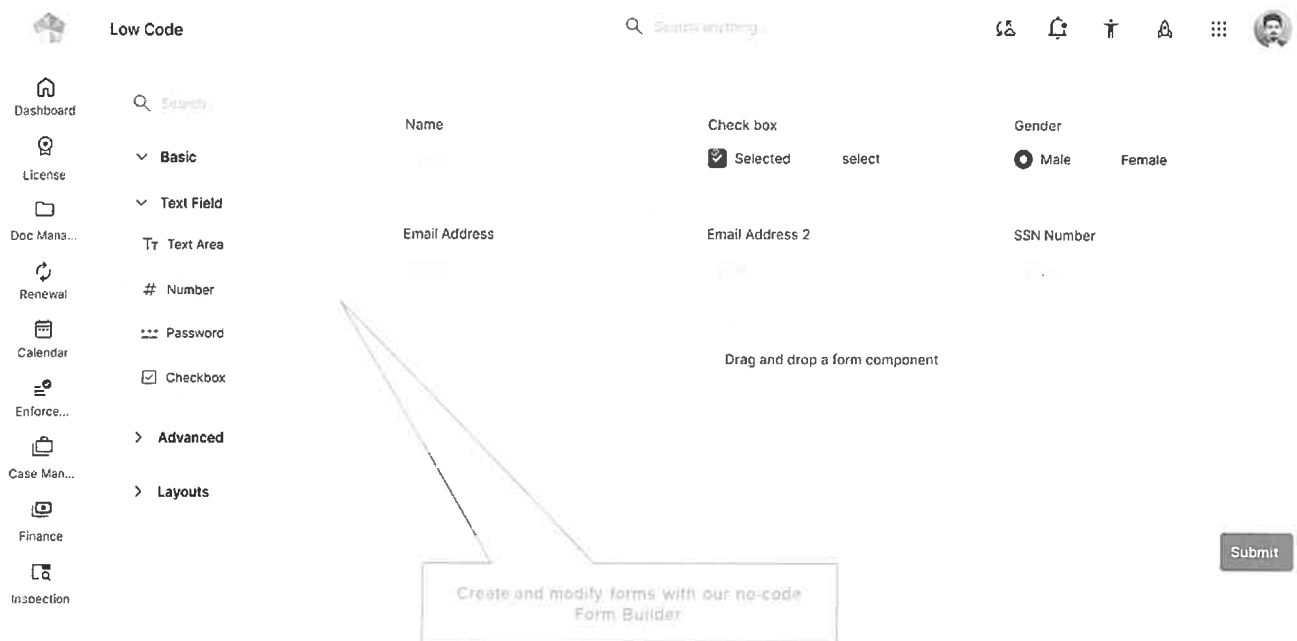
Figure 22: Business Rules Engine Screen

3. **Form Builder & Page Designer:** The platform includes a powerful **Form Builder and Page Designer** (powered by Form.io), empowering business users to create and update intake forms, evaluations, and notifications without needing code-level changes as shown in **Figure 23**. This capability enhances operational flexibility and allows for rapid adaptation to evolving requirements.

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Figure 23: Form Builder Screen

4. **Enterprise Document Management System:** Empower Platform also includes a secure and compliant **Enterprise Document Management System**, which leverages AWS S3 for reliable document storage and integrates with DocuSign for digital signature workflows. These capabilities streamline documentation across the provider lifecycle while supporting audit readiness and regulatory compliance.

5. **Learning Management and Knowledge Management:** An integrated training and knowledge-sharing module that combines a Learning Management System (LMS) with a centralized knowledge repository as shown in **Figure 24 & 25**. It supports user onboarding, role-based training, and policy documentation, while offering searchable access to manuals, FAQs, and learning materials within the application interface.

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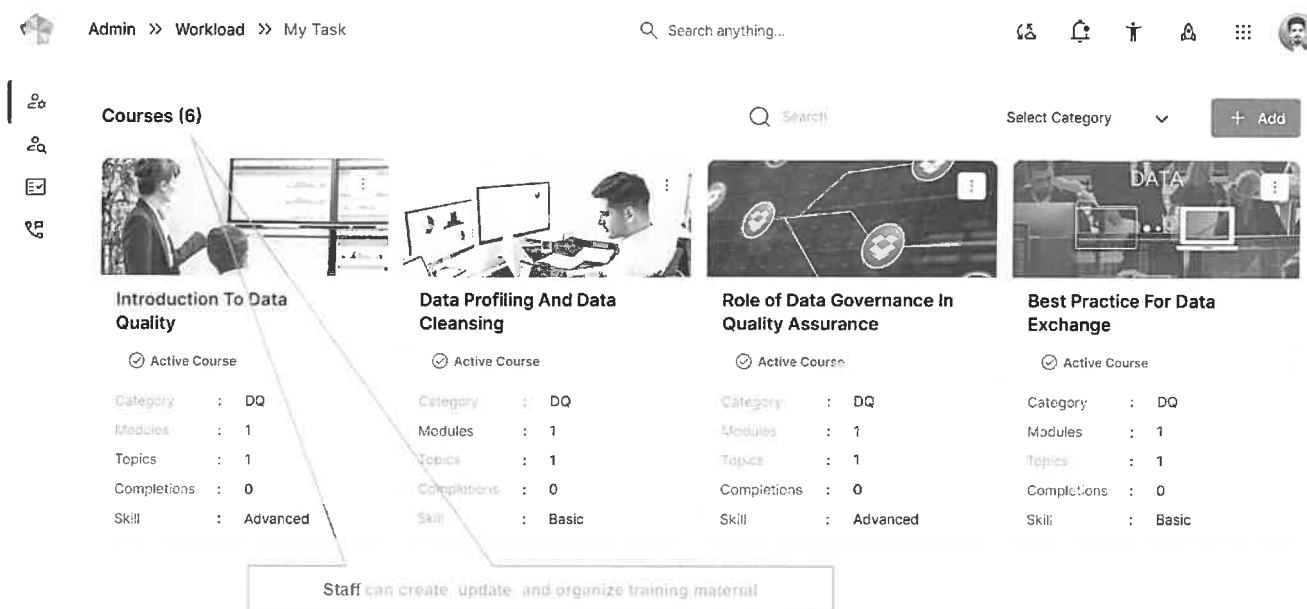
Figure 24: LMS Screen
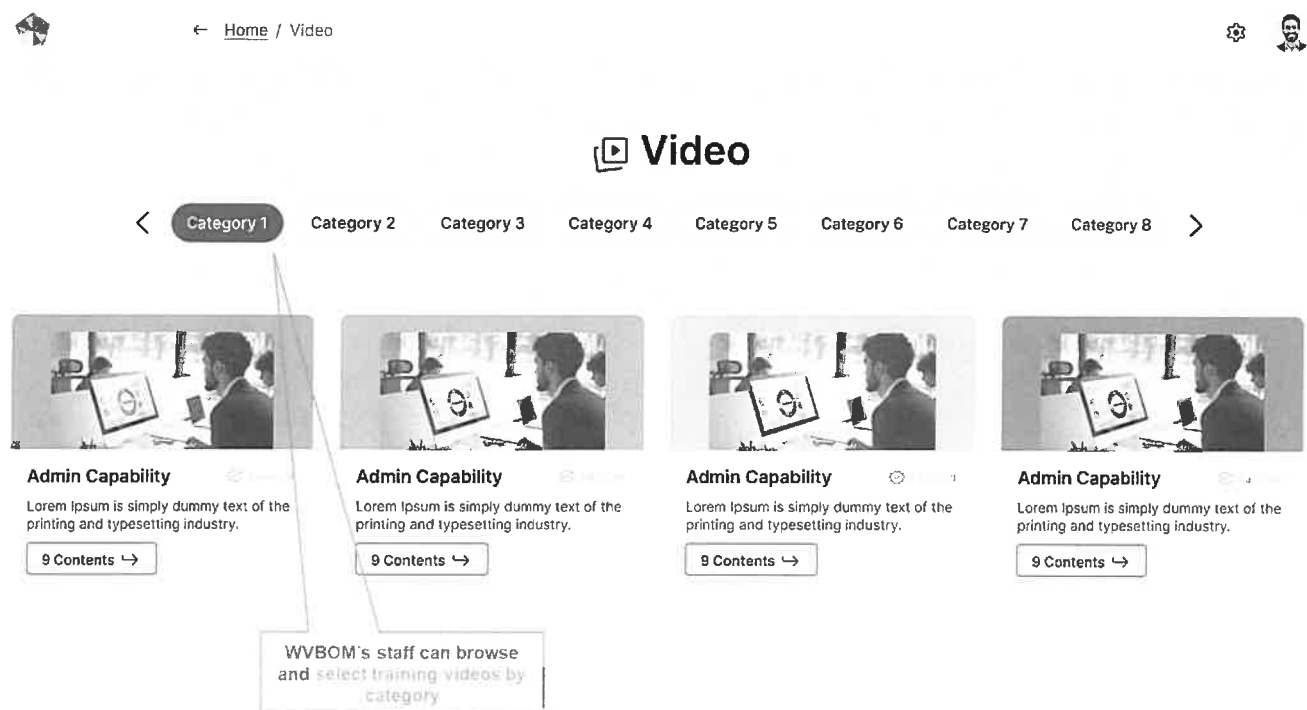
Figure 25: Video Library Organized by Category

6. **Cardy AI Bot:** An integrated AI-powered chatbot and voice assistant that interacts with applicants, licensees, and staff to answer frequently asked questions, assist with onboarding, and route users to appropriate services as shown in **Figure 26**. The bot leverages natural language processing (NLP) to understand intent, provide contextual help, and improve overall user experience through both text and voice-based engagement.

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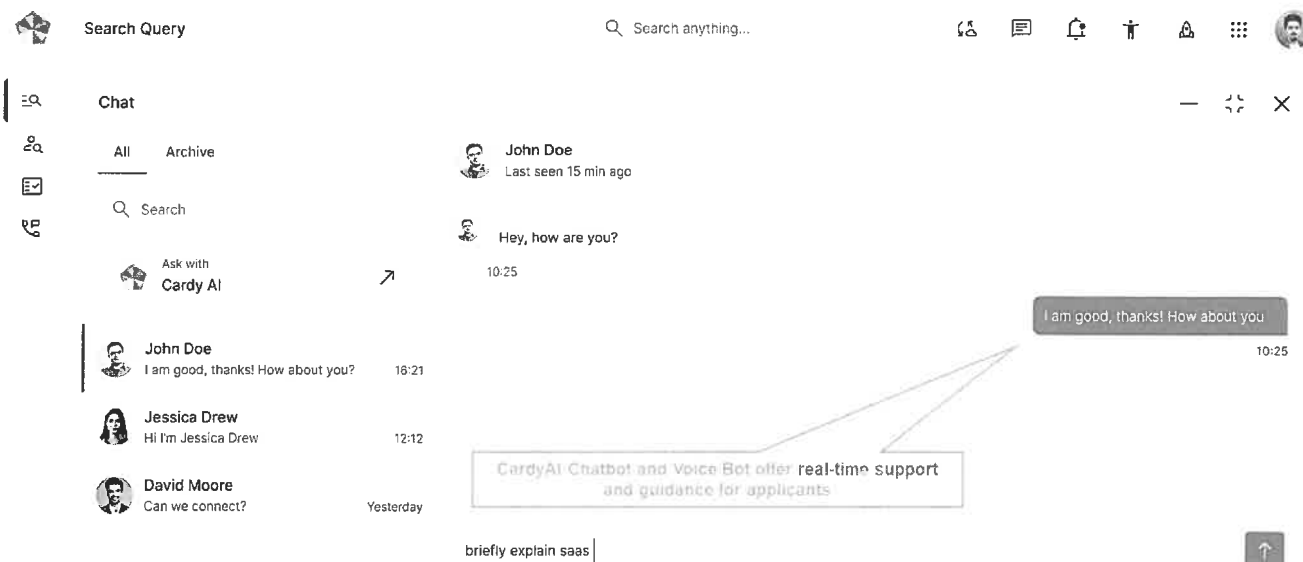
Figure 26: CardyAI Chatbot Screen

Additional Empower Capabilities include:

- **Analytics Engine**: Embedded tools for real-time dashboards, trend analysis, and performance tracking using AWS QuickSight.
- **Case and Person Match Engines**: Smart deduplication tools that identify potential duplicates and flag matching records across systems, minimizing data entry errors and fraud risks.
- **OCR Engine**: Converts scanned or uploaded documents into machine-readable text, enhancing searchability and document automation.
- **Integrated Ticketing System**: Allows for service request tracking, issue resolution, and internal workflow management.

Together, these capabilities empower agencies to deliver consistent, transparent, and responsive services while maintaining compliance with applicable federal and state mandates. The platform supports future expansion and modernization initiatives through API-based interoperability, configuration-driven development, and robust support for cloud-native security and performance optimization tools.

Technical Architecture

The CC-PM solution is a modular, cloud-native solution built on a microservices architecture, deployed on **Amazon Web Services (AWS) GovCloud (US)** using **Amazon Elastic Kubernetes Service (EKS)**. The platform is designed to meet rigorous standards for scalability, availability, security, and compliance, aligning with state and federal regulatory requirements.

The below **Figure 27** provides an overview of the AWS infrastructure and technical components used in the CC-PM solution.

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Figure 27: Technical Components of CC-PM solution

Presentation Layer

- The front-end of the CC-PM solution is developed using **Angular** and rendered as a single-page application (SPA) hosted on **Amazon S3**, with global content delivery via **Amazon CloudFront**.
- This architecture provides a responsive, accessible (WCAG 2.1 AA-compliant), and performant user experience across devices and browsers.
- The UI includes advanced search capabilities, customizable dashboards, and guided workflows tailored to user roles and permissions.

Business Logic Layer

- Business logic is implemented using stateless **Node.js microservices** containerized in **Docker** and orchestrated through **Amazon EKS**.
- Services communicate internally using RESTful APIs secured with **IAM roles**, and externally via **Amazon API Gateway**, integrated with **AWS WAF** for web application security.
- Core business rules, validations, workflows, and task queues are managed using this layer, ensuring modularity and maintainability.

Data Layer

- The platform leverages **Amazon RDS for PostgreSQL** for transactional data and **Amazon ElastiCache (Redis)** for caching session data and high-speed lookups.

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- All data at rest is encrypted using **AWS KMS**. For unstructured content (documents, attachments), **Amazon S3** is used with intelligent tiering for cost efficiency.
- Database connections are optimized using connection pooling, and read replicas are configured for load distribution.

Integration Layer

- CC-PM includes a robust **Integration Layer** built on **WSO2 Enterprise Service Bus (ESB)** and **AWS EventBridge** for event-driven communication between internal services and external systems (e.g., state data hubs, case management systems, payment processors).
- REST, SOAP, SFTP, and message queues are supported, with detailed logging and monitoring enabled through **Amazon CloudWatch Logs**.

Reporting and Analytics

- For reporting and analytics, the platform uses **AWS QuickSight** for interactive dashboards and embedded analytics, and for querying data stored in S3 using SQL.
- Reports can be scheduled, role-based, and exportable in multiple formats.
- Audit trails are retained via **Amazon CloudTrail**, and operational insights are monitored using **Amazon CloudWatch Metrics** and **ELK stack** (Elasticsearch, Logstash, Kibana).

Security Layer

- Security is integrated at every level of the platform. All services and communication paths are protected using **TLS 1.2+**, with **IAM roles** handling internal authentication.
- AWS-native services such as **GuardDuty**, **Inspector**, **Security Hub**, **CloudWatch**, and **CloudTrail** provide real-time threat detection, vulnerability analysis, and compliance tracking.
- Application security is embedded in the development lifecycle through **SonarQube** (static code analysis) and **ImmuniWeb** (dynamic testing).
- Role-Based Access Control (RBAC) is enforced at the application level.
- TLS/SSL certificates are managed using **AWS Certificate Manager (ACM)** for secure deployment across CloudFront, API Gateway, and Load Balancers.

The **AWS Infrastructure and Network Security Figure 28 illustrated below** depicts the core security architecture and network protections leveraged within the proposed CC-PM Solution's AWS GovCloud (US) environment. It highlights layered security controls, network segmentation, encryption mechanisms, identity management, and monitoring tools implemented to safeguard sensitive data, support regulatory compliance, and maintain secure operations within the State's Rehabilitation Case Management System.

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Security - AWS Infra and Network
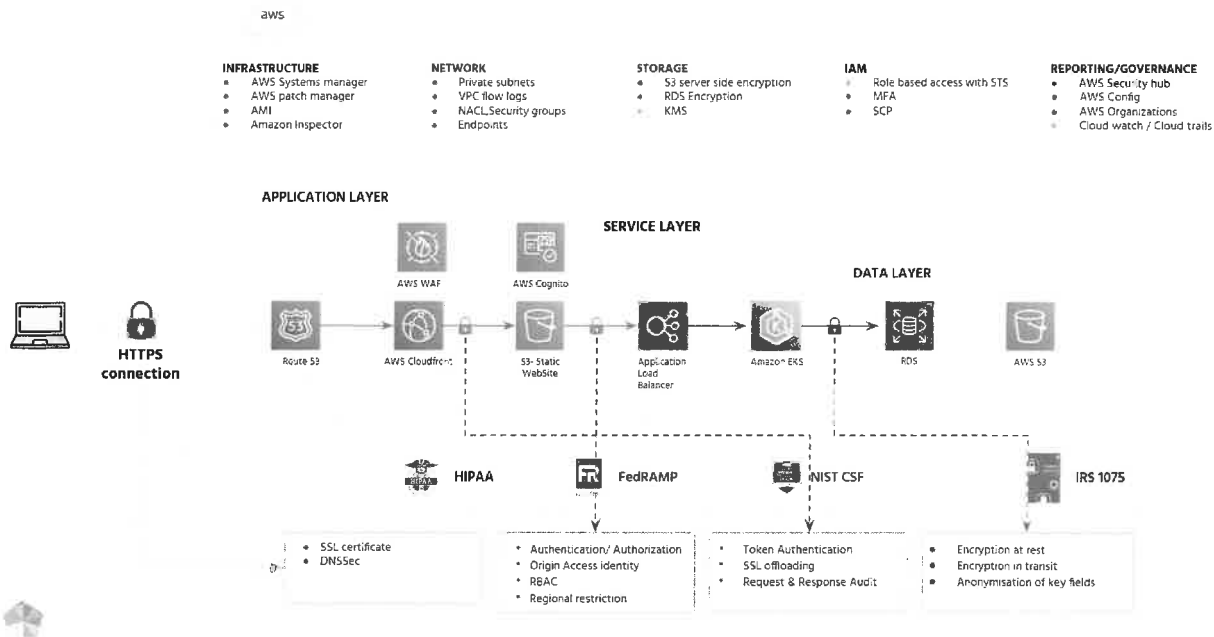
Figure 28: AWS Infrastructure and Network Security

OWASP Risk Mitigation

- The Empower Platform's security model is aligned with the OWASP Top 10 security risks to proactively safeguard against common application vulnerabilities.
- Input validation and output encoding are implemented to prevent injection attacks (Broken Access Control, Injection).
- Strong authentication and session management practices are enforced to mitigate broken authentication.
- Sensitive data is encrypted in transit and at rest to address Insecure Design and Software and Data Integrity Failures.
- Secure HTTP headers, Content Security Policies (CSP), and cross-origin protections mitigate XSS and CSRF vulnerabilities (Identification and Authentication Failures, Vulnerable and Outdated Components).
- Continuous code scanning with SonarQube and dynamic security testing with ImmuniWeb help identify and remediate vulnerabilities early in the DevSecOps pipeline.
- Security headers and TLS 1.2+ are enforced across all endpoints to protect against man-in-the-middle attacks and data leakage.
- Role-based access control (RBAC), audit trails, and fine-grained permissions are used to maintain data integrity and restrict access based on least privilege principles.

The **OWASP Risk Mitigation Figure 29 illustrated below** demonstrates how the CC-PM Solution leverages AWS GovCloud (US) security services and architectural best practices to address the OWASP Top Ten risks within the licensure and information system. The diagram outlines layered protections including input validation, authentication and access controls, encryption, logging,

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vulnerability scanning, and monitoring to reduce security exposures, strengthen system resilience, and align with industry-recognized security frameworks.

Open Web Application Security Project (OWASP) Risks Mitigation
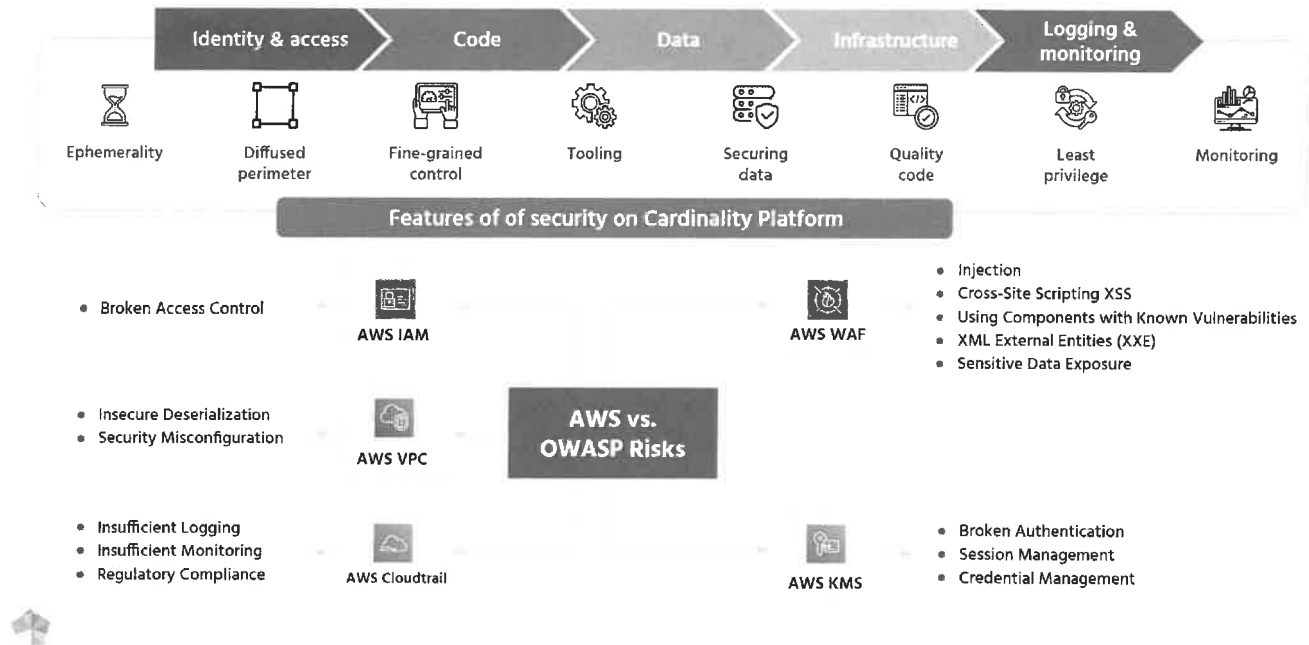
Figure 29: OWASP Risk Mitigation

Identity & Access Management

- CC-PM uses **AWS IAM** and **AWS Cognito** for identity management by default, supporting both internal users (agency staff) and external users (providers, citizens).
- The platform is capable of integrating with **Microsoft Entra ID (Azure AD)**, **Okta**, or any **SAML 2.0** or **OAuth 2.0**-based identity provider.
- Fine-grained access controls, session management, and multifactor authentication are supported for enhanced security.

Observability & Monitoring

- The CC-PM solution embeds observability at its core by utilizing AWS-native monitoring and logging tools such as Amazon CloudWatch, AWS X-Ray, and CloudTrail.
- These tools provide real-time visibility into application performance, API latency, infrastructure health, and system logs.
- CloudWatch Dashboards and Alarms offer proactive alerting and visualization, enabling operations teams to monitor metrics and respond quickly to anomalies.
- AWS X-Ray provides distributed tracing for microservices, helping to diagnose performance bottlenecks and dependency failures.
- Application logs are centralized and indexed via the ELK (Elasticsearch, Logstash, Kibana) stack for advanced querying and visualization.

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- This integrated observability framework supports both automated alerts and forensic analysis, ensuring system health, performance optimization, and compliance reporting.

Scalability & High Availability

- The platform is built to scale horizontally across microservices using **EKS auto-scaling groups**. Stateless services and database replicas allow the system to handle increased loads.
- Critical services are deployed in **multi-AZ configurations** to maintain availability even during failure scenarios. S3, RDS, and ElastiCache are configured with high availability and automatic failover.

DevSecOps

- The CI/CD pipeline is implemented using **AWS CodePipeline** and **Azure DevOps**, integrated with **SonarQube** and **ImmuniWeb** for automated vulnerability scanning and policy checks.
- Artifacts are stored in **Amazon ECR**, and Kubernetes manifests and Helm charts are versioned and deployed using GitOps practices. Security checks are enforced at build, deploy, and runtime stages.

Infrastructure as Code (IaC)

- The entire infrastructure is defined using **Terraform** and **AWS CloudFormation**, ensuring repeatable, version-controlled, and auditable deployments.
- Infrastructure provisioning, secrets management (via **AWS Secrets Manager**), and resource tagging are automated through pipelines, supporting environment-specific configurations and rapid rollback.

Environments

- The platform provides isolated environments for **Development**, **Testing**, **Staging**, **UAT**, and **Production**, each with dedicated VPCs and access controls.
- Data masking and anonymization are applied in non-production environments, and environment parity is maintained through automated provisioning scripts and IaC templates.

Data Compliance

- CC-PM is built in compliance with **FERPA**, **HIPAA**, **CCPA**, **PCI** and other applicable federal and state regulations.
- Encryption is enforced at rest and in transit using **AES-256** and **TLS 1.2+**. All access and data changes are logged and auditable. The system is capable of retaining and purging data in accordance with State-defined retention policies.

Data Backup & Restore Strategy

- Automated daily backups are configured using **Amazon RDS snapshots** and **Amazon S3 versioning** for object storage.

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- Point-in-time recovery is enabled for databases, and backups are retained based on retention policies (e.g., 30/90/365 days).
- Restore procedures are tested periodically as part of disaster recovery (DR) drills and logged in **AWS Backup Audit Manager**.

Disaster Recovery & Business Continuity

- The platform is designed for **high resilience and rapid recovery**. Critical services are deployed across **multiple Availability Zones**, and DR plans are documented and tested quarterly.
- Recovery Time Objective (RTO) is under **15 minutes**, and Recovery Point Objective (RPO) is **1 hour**.
- Infrastructure and application recovery scripts are automated using IaC and stored in secure, versioned repositories. Failover procedures are monitored and alerting is enabled via **Amazon CloudWatch Alarms**.

The proposed technical architecture provides a resilient, modular, and scalable foundation tailored to meet the State's Medical Licensure and Records Management System,current and future operational, security, performance, and compliance needs. It is designed to support large-scale licensing and provider management functions while remaining extensible for evolving regulatory priorities, new workflows, third-party integrations, and federal mandates all without disrupting core system operations.

3.1. Replacement and Modernization of the WVBOM's Legacy Database (RFP Section 4.2.1.1)

Cardinality proposes a secure, modular, and cloud-based **CardyCares Provider Management (CC-PM)** solution built on our **EmpowerPlatform**, a low-code, government-purpose platform designed specifically for state licensing and regulatory agencies. The proposed CC-PM solution will replace WVBOM's legacy Oracle-based content management and applications/renewals system with a modern, configurable environment that enhances operational efficiency, improves user experience, and enables scalability for future regulatory requirements all with minimal disruption to staff, licensees, or the public.

1. Secure and Scalable Architecture

The EmpowerPlatform leverages a **multi-tier architecture** with logical separation of presentation, business logic, and data layers. The system is **cloud-hosted on AWS GovCloud**, ensuring compliance with NIST 800-53, FedRAMP, HIPAA, and West Virginia cybersecurity standards.

- **Cloud-Hosted Environment:** Deployed on FedRAMP-authorized AWS GovCloud environment to meet state and federal security requirements.
- **Data Security:** Role-Based Access Control (RBAC), AES-256 encryption at rest, TLS 1.2+ in transit, and granular audit trails.
- **Resiliency:** Built-in redundancy, high availability (99.9%), and automated failover mechanisms.
- **Scalability:** Supports current WVBOM workloads with capacity to expand for increased license volume, new license types, and regulatory changes without major redesign.

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- **High Availability & Disaster Recovery:** Built-in redundancy and automated backups maintain data availability and system resilience.

2. Smooth Modernization with Minimal Disruption

Our **CardyWay Implementation Model** provides business continuity and user engagement throughout the modernization process. This model emphasizes incremental delivery through **Gap-Based Sprints**, providing a working version of the system within the first 30 days from project kickoff and progressive refinements thereafter. This approach provides:

- Continuous visibility of progress through working prototypes.
- Incremental rollout to minimize operational disruption.
- Early adoption and feedback from WVBOM stakeholders.

Our **data migration strategy** includes a detailed assessment of legacy Oracle data, mapping of historical records, and multi-stage validation to enable data accuracy, completeness, and traceability. Parallel operations will be maintained during the transition phase to eliminate downtime and service interruptions.

3. Fully Integrated and Scalable Solution

The proposed system unifies all key WVBOM operations into a single, secure platform:

- **Licensing and Renewal Management:** Supports all existing license types (MD, DPM, PA, etc.) with the ability to introduce new credential types dynamically.
- **Document and Records Management:** Centralized **Enterprise Document Management System (EDMS)** powered by AWS S3 for all documents and media, with structured and unstructured data stored in the **RDBMS**.
- **Complaint and Enforcement Tracking:** Integrated case management workflows for complaints, investigations, and disciplinary actions.
- **Online Applicant Portal:** Mobile-friendly, public-facing portal for application submission, status tracking, document uploads, and fee payments via integration with the **WV State Treasurer's E-Gov system**.
- **Website Integration:** Public search capability for license verification and disciplinary actions directly embedded within the WVBOM website.

The platform's **PageBuilder**, **Workflow Designer**, and **Rules Engine** allow agency administrators to modify workflows, forms, and rules without code changes supporting WVBOM's requirement for scalability and responsiveness to policy changes.

4. Improved Business and Process Efficiencies

The modernized solution transforms how WVBOM manages licensing and regulatory operations:

- Reduces processing times for applications and renewals through automation and configurable workflows.
- Provides real-time dashboards and performance metrics for administrators and Board members.

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- Enhances data accuracy and reduces manual entry via validation, automation, and integration.
- Streamlines communication through built-in alerts, notifications, and messaging between staff and applicants.
- Supports on-demand self-service for licensees and applicants, reducing staff workload and response times.

5. Scalable and Future-Ready Design

The CC-PM solution supports **microservices-based architecture** and **API-first design**, allowing integration with external systems, including background check services, payment gateways, and other state data sources.

The system is scalable both vertically and horizontally, capable of handling WVBOM's projected record growth (40,000+ records in five years) without performance degradation.

6. Configurability and Ease of Change

WVBOM staff will have direct administrative control through configurable tools such as:

- **PageBuilder for Configurable Forms** – Build and update application forms without coding.
- **Workflow Designer** – Define and adjust licensing and disciplinary processes.
- **Rules Engine** – Modify business rules and decision logic in response to regulation changes.
- **Dashboard and Reporting Tools** – Real-time analytics, visualizations, and trend analysis.
- **Alerts and Notifications Engine** – Automated communications for renewals, expirations, and compliance alerts.
- **API Configurator** – Enable integration with third-party systems through secure APIs.

Cardinality's CC-PM solution provides WVBOM with a **secure, configurable, and scalable system** that replaces outdated legacy technology with modern tools designed for efficiency, transparency, and continuity. The implementation approach minimizes disruption, empowers agency staff, and positions WVBOM for long-term adaptability as licensing requirements evolve.

3.2. Integration of Applications, Renewal, Compliance, Monitoring and Cloud Based Document System (Section 4.2.1.2)

The proposed **CardyCares Provider Management (CC-PM)** solution delivers a unified digital environment that connects licensing, disciplinary compliance, renewals, and document management into one secure, role-based system. This approach replaces fragmented legacy tools with a coordinated platform that supports WVBOM's daily operations and long-term regulatory objectives. The below **Figure 30,** illustrates integration of CC-PM Solution,

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Integration Architecture
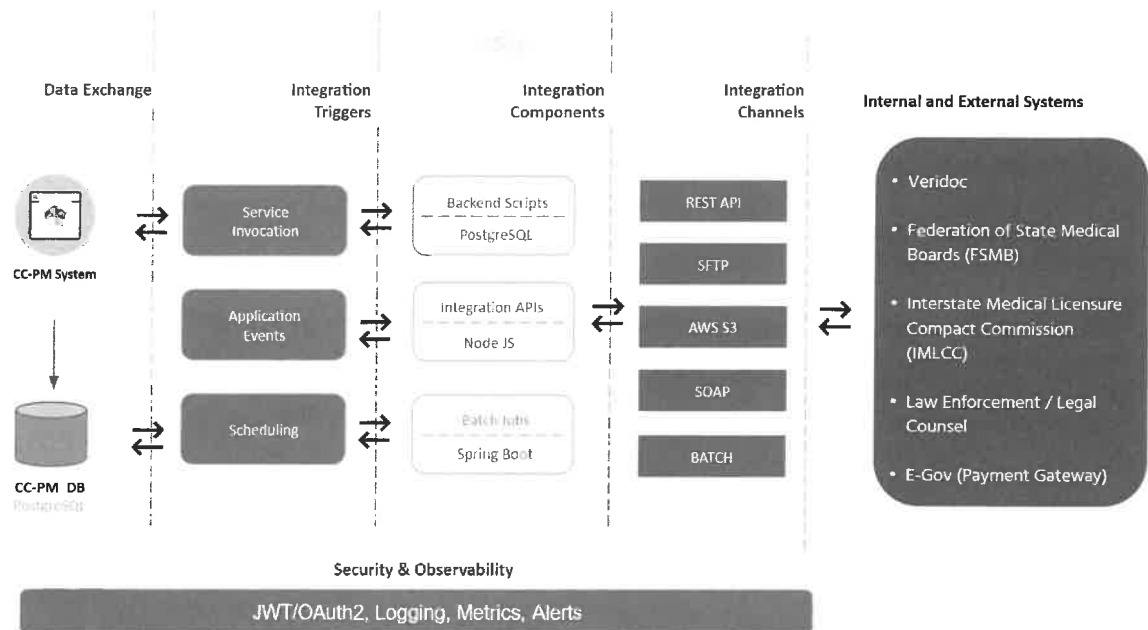
Figure 30: Integration of CC-PM Solution

1. Unified and Integrated System Architecture

The proposed **CC-PM** integrates the following key components under a shared data model and workflow framework:

- **Licensing and Renewal Management Module** – Manages all credential types including MD, DPM, and PA licenses, as well as permits, registrations, and authorizations. Supports both new applications and renewals through a configurable online portal.
- **Disciplinary Compliance and Monitoring Module** – Tracks complaints, investigations, sanctions, and compliance milestones within the same system, ensuring visibility across all stages of case progression.
- **Cloud-Based Enterprise Document Management System (EDMS)** – Manages all supporting documentation and media files associated with licensing and disciplinary cases. The EDMS is powered by AWS S3 and integrates directly with the application and disciplinary modules.

This fully integrated environment eliminates data silos, streamlines workflows, and allows WVBOM users to access all relevant records, communications, and documents from a single interface.

2. Online Applications and Renewals

- **Comprehensive Self-Service Portal:** Licensees can initiate new applications, renew existing licenses, upload required documents, pay fees, and track application status from any device.

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- **Automated Eligibility Checks:** Configurable business rules validate application completeness, credential requirements, and fee payment before routing for review.
- **Integrated Payment Processing:** Works with state-approved payment gateways **(West Virginia State Treasurer's Office (WVSTO) E-Gov Payment Gateway)** for secure, real-time transaction posting and reconciliation.
- **Milestone Notifications:** Applicants receive automated updates via email, SMS, and portal notifications at each stage of the process.

3. Cloud-Based Document Management

- **Secure Central Repository:** All licensing applications, supporting documentation, investigation files, and board materials are stored in a secure, scalable cloud environment.
- **Advanced Indexing and Search:** Metadata tagging enables quick, precise retrieval of documents during audits, hearings, or compliance reviews.
- **Version and Audit Tracking:** Every document change is logged with user ID, date, and version history for accountability.
- **Role-Based Access:** Permissions restrict document access to authorized staff, aligning with WVBOM's security framework.

4. Real-Time Synchronization and User Access

The integrated system operates under a **real-time synchronization framework**, ensuring that updates made in one module such as a disciplinary action, renewal approval, or compliance event are immediately reflected across the system.

- **For Staff:** Licensing, disciplinary, and administrative staff operate in a single environment with secure role-based views tailored to their responsibilities.
- **For Applicants and Licensees:** The public-facing portal enables licensees to manage applications, submit renewal documents, track disciplinary statuses, and receive automated alerts through the **Notifications Engine**.
- **For the Public:** Select disciplinary data and license information are published automatically to the WVBOM website for transparency and compliance with public disclosure requirements.

5. Secure, Standards-Compliant Integration Framework

The **CC-PM API Configurator** enables secure interoperability with state and third-party systems. Common integrations include:

- **WV State Treasurer's E-Gov system** for online payments and fee reconciliation.
- Background check or national verification services for automated credential validation.
- Other West Virginia agency systems as needed via **RESTful APIs**.

All data exchanges adhere to **OAuth 2.0 authentication**, **TLS encryption**, and compliance with **NIST 800-53**, **FedRAMP**, and **HIPAA** security standards.

Benefits of the Fully Integrated Approach

This fully integrated system delivers significant operational and performance benefits:

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- **Unified Data Environment:** Single source of truth for licensing, disciplinary, and documentation data.
- **Faster Decision-Making:** Real-time access to all relevant information for Board members and staff.
- **Enhanced Transparency:** Linkage between licensing and disciplinary outcomes ensures accountability.
- **Reduced Administrative Effort:** Automated workflows minimize manual document handling and data entry.
- **Scalability and Flexibility:** Easily supports future additions of new credential types or regulatory processes.

3.3. Complete Data Migration From WVBOM's Legacy Database and Other Historical Data (RFP Section 4.2.1.3)

Cardinality's **CardyCares Provider Management (CC-PM) Solution** includes a proven and methodical data migration framework designed to securely and completely migrate all data from WVBOM's legacy systems and other historical data sources into the new solution. Our approach combines automation, validation, and domain expertise to ensure accuracy, integrity, and continuity of operations throughout the transition.

1. Comprehensive Migration Planning

Cardinality begins with a **Data Discovery and Mapping Phase** in collaboration with WVBOM's technical and business staff. During this phase, we:

- Analyze existing data structures, formats, and volumes across the legacy database and other data repositories.
- Identify data owners, source-to-target mappings, and any required data transformations.
- Develop a detailed **Data Migration Plan** outlining migration methodology, sequencing, validation steps, and cutover strategy.

This plan becomes part of the overall implementation roadmap and is reviewed and approved by WVBOM before any data movement occurs.

2. Proven, Automated Migration Framework

Cardinality employs its reusable **Data Migration Framework, a configurable** toolset built on industry-standard ETL (Extract, Transform, Load) technologies. Key features include:

- **Automated Extraction:** Securely extracts data from the legacy system using read-only access methods.
- **Transformation Rules Engine:** Standardizes and cleanses data to align with the new CC-PM data model and validation requirements.
- **Secure Loading:** Loads validated data into staging and production environments using controlled and auditable processes.
- **Incremental Loads:** Supports iterative mock migrations and incremental updates to ensure minimal downtime and zero data loss.

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This framework allows Cardinality to handle both structured and unstructured datasets efficiently while maintaining end-to-end traceability.

3. Handling of Structured and Unstructured Data

In alignment with the **CC-PM Solution's data architecture**, data is migrated to its appropriate destination layer:

- **Structured Data:** All licensing, disciplinary, and configuration data is migrated to the **Relational Database Management System (RDBMS)** within CC-PM.
- **Documents and Media:** All legacy documents, scanned images, videos, and audio files are migrated into the **Enterprise Document Management System (EDMS)**, powered by **AWS S3**, maintaining existing metadata and linkages to case records.

This ensures WVBOM's historical and current information is consolidated, searchable, and accessible within the new system.

Key Benefits to WVBOM

- **Complete and Accurate Data Transfer** from legacy systems.
- **No Interruption** to daily operations during transition.
- **Automated Validation** provides high data quality.
- **Secure, Compliant, and Auditable** migration process.
- **Preservation of Historical Context** with linked documents and records.

3.4. Support for All License Types with Advanced Search, Reporting, and Future Credential Configuration (RFP Section 4.2.1.4)

The proposed **CardyCares Provider Management (CC-PM)** solution is designed to fully support all current WVBOM license and credential types, including physician, physician assistant, podiatric physician, medical corporation, and other regulated categories. Each license type is configured with its own application forms, review and approval workflows, fee schedules, and renewal rules, reflecting WVBOM's existing processes.

The system's **configurable architecture** enables WVBOM administrators to create and implement new license or credential types without requiring changes to the platform's core code. Through an intuitive administrative console, staff can define new license categories, add custom data fields, set eligibility requirements, and assign unique workflow steps, enabling the Board to adapt quickly to legislative or regulatory changes.

1. Comprehensive License and Credential Management

The CC-PM solution's **Licensing and Credentialing Module** provides configurable templates and workflows to manage every stage of the license lifecycle application, review, approval, issuance, renewal, suspension, reinstatement, and expiration. Each credential type can have its own:

- Application forms and validation rules
- Fee structures and renewal cycles

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- Review and approval workflows
- Document and evidence requirements
- Notification and reminder rules

This enables WVBOM to automate processes across multiple credential types while maintaining the specific business rules and compliance criteria applicable to each.

2. Scalability for Future License and Credential Types

The CC-PM's metadata-driven configuration framework allows administrators to easily create and deploy new license or permit types by defining attributes such as form fields, review stages, and certificate templates **without any custom development**. Using the built-in **PageBuilder** and **Workflow Designer**, WVBOM staff can:

- Create new application and renewal forms through drag-and-drop tools.
- Configure routing and approval workflows tailored to new credential categories.
- Define new rules and conditions using the **Rules Engine**.
- Add new document templates and print formats for certificates, permits, or cards.

This flexibility positions WVBOM to adapt quickly to future legislative or regulatory changes without system re-engineering.

3. Advanced Search, Sort, and Export Capabilities

The CC-PM solution provides robust **search and data management tools** to allow staff to efficiently locate, update, and report on records. Key capabilities include:

- **Global Search:** Keyword-based and filtered search across all licensee and credential holder data.
- **Advanced Filters:** Configurable filters for license type, status, expiration date, disciplinary status, or region.
- **Customizable Views:** Saved search configurations and column layouts per user role.
- **Batch Updates:** Secure editing and status updates for multiple records at once.
- **Data Export:** Authorized users can export data to Excel, CSV, or PDF for analysis or reporting purposes.

All search, filter, and export operations adhere to WVBOM's security and role-based access policies.

4. Robust Reporting and Analytics

Cardinality's embedded **Dashboards and Reporting Engine** empowers WVBOM staff to visualize and analyze key performance indicators and compliance data in real time.

- **Pre-built Reports:** Licensing volume, renewals, expirations, disciplinary actions, and turnaround time metrics.
- **Ad-hoc Reporting:** Users can build custom queries and visualizations without technical assistance.

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- **Interactive Dashboards:** Graphical widgets and trend analysis for leadership and Board members.
- **Export Options:** Reports can be scheduled, shared, or exported in multiple formats for audit or publication.

All reports can be restricted by user roles to protect sensitive data and comply with WVBOM's governance standards.

5. Unified Data Management and Audit Controls

The platform maintains a **single, authoritative database** where all license and credential records are stored with full version control and audit logging. Every modification, status change, or data update is timestamped and linked to the responsible user. This ensures transparency, accountability, and traceability across all licensing and compliance operations.

Additionally, the **Alerts and Notifications Engine** automates reminders for renewals, pending reviews, or expiring documents, ensuring proactive management of credentials and timely communication with licensees.

Benefits to WVBOM

- Supports **all current and future** license and credential types with configurable templates.
- Provides **end-to-end visibility** into each licensee's lifecycle from application to renewal and compliance.
- Reduces manual data handling through advanced **search, sort, and reporting tools**.
- Enhances **data accuracy and efficiency** across licensing, credentialing, and disciplinary processes.
- Empowers WVBOM staff to **configure and manage** system updates without vendor dependency.

3.5. Integrated Public Data Search On WVBOM Website At No Cost To The Public (RFP Section 4.2.1.5)

The proposed **CardyCares Provider Management (CC-PM)** solution includes a fully integrated public search and display module that connects directly to the WVBOM website, enabling authorized public data to be accessed and searched at no cost to the public. This functionality is designed to promote transparency, reduce administrative inquiry volume, and provide an intuitive, modern interface for citizens, employers, and other stakeholders who require timely verification of medical licenses and credentials.

1. Secure Website Integration Architecture

The CC-PM solution is built on **open standards and API-first architecture**, which allows the WVBOM website to securely query and display public information directly from the system in real time.
Key integration features include:

- **RESTful APIs:** Pre-built and configurable APIs that allow secure data exchange between the CC-PM system and the public-facing website.

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- **Data Publication Controls:** Only Board-approved, non-confidential data elements (e.g., license type, license number, status, effective dates, and disciplinary history) are made publicly accessible.
- **Real-Time Synchronization:** Public search results are dynamically updated as records are modified in the CC-PM database eliminating delays or manual updates.
- **Caching Layer:** Optimized caching for fast search response times while minimizing system load on backend services.

This architecture ensures a smooth and secure user experience for both internal staff and the public.

2. Configurable Public Search Portal

Cardinality will enable a **Public License Lookup Portal**, integrated within the existing WVBOM website, that provides public access to selected data elements. Core features include:

- **Search by Multiple Criteria:** Name, license number, profession, credential type, city, or status.
- **Responsive Design:** Fully compatible with desktops, tablets, and mobile devices.
- **Advanced Filters:** Ability to narrow search results by license type, active/inactive status, or disciplinary action.
- **Public Access to Disciplinary Actions:** Summary data and downloadable documents (e.g., Board Orders) made accessible when approved for public view.
- **Dynamic Data Refresh:** Updated instantly from the CC-PM database to ensure the information displayed is always current and accurate.

The search portal can be customized to align with WVBOM's branding, navigation structure, and accessibility standards (WCAG 2.1).

3. Role-Based Data Exposure and Security Controls

The CC-PM solution includes Role-Based Access Control (RBAC) and Data Classification Policies that define what data can be exposed publicly.

- Only designated, non-sensitive attributes are published externally.
- Personally identifiable information (PII) and internal notes are strictly excluded from public APIs.
- Data publication endpoints are protected using **OAuth 2.0** authentication and encrypted communication channels (TLS 1.2+).
- Audit logging tracks all external data requests to maintain transparency and accountability.

These safeguards allow WVBOM to balance openness with data security and compliance with state and federal privacy regulations.

4. Administration and Content Management

Authorized WVBOM administrators can easily manage which data elements are displayed publicly using configurable settings within the CC-PM admin console.

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- **Toggle Data Fields:** Enable or disable specific data attributes for public display without technical intervention.
- **Customizable Labels and Formats:** Modify field names, ordering, and display formats.
- **Publishing Rules:** Define conditions for public visibility (e.g., show disciplinary records only after a final order).
- **Audit Trails:** Maintain a complete history of data exposure configuration changes.

This flexibility ensures WVBOM has full control over the scope and presentation of public-facing data.

5. Integration Approach

The integration is designed for reliability, performance, and compliance with WVBOM's data management policies, ensuring uninterrupted service to both internal users and the public.

- **Real-Time or Scheduled Data Publishing:** The CC-PM solution synchronizes public data with the WVBOM website either in real time or on an administrator-defined schedule, ensuring that the website always reflects the most current information without requiring duplicate data entry.
- **Secure API-Based Communication:** Data is transmitted from CC-PM to the WVBOM website via encrypted APIs, maintaining the highest standards of data security and compliance with state and federal privacy regulations.
- **Data Governance Controls:** Only data fields designated by WVBOM for public disclosure are exposed to the public interface. This includes compliance with applicable open records laws while safeguarding sensitive or personally identifiable information (PII).

Operational Benefits for WVBOM

- Provides **real-time, accurate license verification** and disciplinary information to the public.
- Reduces **staff workload** by minimizing manual responses to verification inquiries.
- Enhances **public trust and transparency** through open access to verified information.
- Fully complies with **security and accessibility standards** for government websites.
- Enables **future scalability**, allowing new data sets or credential types to be published as regulations evolve.

The **CardyCares Provider Management (CC-PM) Solution** empowers WVBOM to deliver a secure, real-time, and user-friendly **public license search capability** directly integrated with its website. Through a combination of configurable APIs, robust security controls, and flexible data governance tools, the solution enhances transparency, supports compliance, and ensures public confidence in the accuracy and accessibility of licensing information without additional cost or administrative burden to the Board.

3.6. Integrated Online Application and Renewal Portal with Mobile Access, Document Exchange, and Self-Issued Credentials (RFP Section 4.2.1.6)

The proposed **CardyCares Provider Management (CC-PM)** solution includes a fully integrated, configurable **web-based application and renewal system** designed to support **all current and future license and credential types** managed by WVBOM. This system enables applicants and

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credential holders to **complete the entire application or renewal process online**, from initial submission to final issuance, while providing mobile-friendly access through a secure portal embedded within WVBOM's public website.

Key Functional Capabilities

1. **Centralized Online Portal**

   - Accessible via a secure, **mobile-optimized portal** directly from the WVBOM website.
   - Provides a **single point of access** for all application, renewal, and credential management activities.
   - Enforces **role-based authentication** (RBAC) to provide appropriate access levels for applicants, staff, and administrators.

2. **Comprehensive Online Application & Renewal Process**

   - Supports **all license, permit, registration, and certificate types**, including those introduced in the future.
   - Employs **dynamic, rules-driven application forms** built with CC-PM's **PageBuilder**, reducing data entry errors and improving user experience.
   - Integrates with WVBOM's internal systems for **real-time data exchange, validation, and status updates**.

3. **Document Uploading and Downloading**

   - Applicants can securely upload required documents such as diplomas, certifications, or background check results.
   - WVBOM staff can provide downloadable forms, letters, and approval notices through the portal.
   - Includes **built-in virus scanning** and file type/size validation to maintain system integrity.

4. **Secure Communication**

   - Features **encrypted, in-portal messaging** for secure correspondence between applicants and WVBOM staff, maintaining an auditable communication history.
   - Offers **email, SMS, and portal-based notifications** for application status changes, missing documents, upcoming expirations, and payment confirmations.

5. **Application Tracking and Notifications**

   - Applicants can track their progress in **real time** via a visual status bar within the portal.
   - **Automated reminders** prompt users for incomplete submissions, pending requirements, or approaching renewal deadlines.
   - **Configurable notification templates** allow WVBOM to align communication tone and content with agency standards.

6. **Self-Service Printing and Downloading**

   - Upon approval, applicants can **self-print licenses, wallet cards, permits, registrations, authorizations, and certificates** in PDF format.
   - Each document includes a **QR code for authenticity verification** by third parties.

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- Historical license and renewal documents remain available for re-download at any time.

7. Mobile-Responsive Design & Accessibility

- Fully **responsive design** ensures optimal usability across smartphones, tablets, and desktop devices.
- Compliant with **WCAG 2.1 Level AA accessibility standards**, supporting inclusive access for all users.

Operational Benefits for WVBOM

- Reduces paper-based workflows and manual data entry for staff.
- Improves applicant satisfaction with faster turnaround times and greater transparency.
- Supports WVBOM's long-term scalability by easily adding new license or credential types without custom redevelopment.

The CC-PM application and renewal system offers a secure, configurable, and mobile-ready solution that empowers applicants while streamlining WVBOM's licensing operations.

3.7. Integrated Payment Processing With WV State Treasurer's E-Gov System (RFP Section 4.2.1.7)

The CC-PM Solution is designed to meet the requirement by providing secure, direct, and fully compliant integration with the WVSTO EGov system for all payment types. This makes sure that WVBOM can accept credit/debit card and EFT/ACH payments easily, with accurate reconciliation and complete audit visibility.

WVSTO EGov API Integration

The CC-PM platform is built to integrate with state-managed financial systems through secure, standards-based API interfaces. Upon receiving the API specifications from WVSTO, CC-PM will establish a robust, scalable connection for real-time payment processing.

- Integrates directly with WVSTO's EGov system using the API details provided by the State Treasurer's Office.
- Supports real-time payment authorization, status updates, and posting of transaction results into the CC-PM database.
- Ensures secure transmission of payment data using encrypted protocols meeting PCI-DSS and state security standards.
- Eliminates manual handling of payment confirmations through automatic synchronization between EGov and CC-PM.

Support for All Required Payment Types

The CC-PM Solution accommodates all payment methods outlined in the amended requirement without additional customization. This flexibility enhances user experience and supports consistent financial management across all WVBOM processes.

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- Accepts credit cards, debit cards, and EFT/ACH transactions as processed through the WVSTO EGov platform.
- Allows applicants to complete payments during new applications, renewals, disciplinary actions, or miscellaneous fee submissions.
- Enables staff to view real-time payment status within the applicant's record immediately after EGov confirmation.
- Ensures consistent financial tracking across all license types and transaction categories.

Automated Fee Posting and Reconciliation

Automation minimizes administrative workload and ensures accurate financial reporting. The CC-PM Solution calculates, posts, and reconciles all fees aligned with WVBOM policies.

- Automatically applies applicable fees based on configurable rules within CC-PM.
- Posts confirmed payments directly to the corresponding member's record after West Virginia State Treasurer's Office (WVSTO) EGov system validation.
- Supports reconciliation reports that compare initiated vs. completed transactions for audit purposes.
- Provides real-time financial dashboards to track daily revenue, payment exceptions, and outstanding balances.

Secure Receipts and Notification Features

The CC-PM Solution enhances transparency and user satisfaction through automated receipt generation and communication. All payment actions are logged and accessible to both staff and applicants.

- Generates instant electronic receipts for all EGov-processed transactions.
- Sends email/SMS notifications confirming successful payments or flagging failed/pending transactions.
- Stores all receipts and payment history within the applicant's digital record for long-term access.
- Displays payment alerts and status updates for staff through the CC-PM administrative dashboard.

Audit, Compliance, and Financial Oversight

The CC-PM Solution provides comprehensive tools to support the State Treasurer's oversight requirements and WVBOM's internal auditing needs. Every transaction is recorded with full traceability, ensuring accountability and compliance.

- Maintains detailed audit trails for all payment activities, including timestamps, transaction IDs, and user identity.
- Supports export of reconciled payment data to standard formats (CSV, XML, or API feeds) for state financial review.
- Ensures compliance with PCI-DSS, NIST, and state treasury policies governing electronic payments.

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- Provides built-in data integrity checks to detect inconsistencies or incomplete financial postings.

Through direct API integration with the WVSTO EGov system, the CardyCares Provider Management (CC-PM) Solution provides WVBOM with:

- A secure, compliant, and unified payment experience
- Full support for credit/debit and EFT/ACH payments
- Automated reconciliation and real-time posting
- Complete audit visibility and financial transparency

This ensures a modernized payment environment that aligns fully with the amended requirement and strengthens WVBOM's operational efficiency.

3.8. Interface, Capabilities And User-Friendly Attributes For A Secure Cloud-Based Documentation System (RFP Section 4.2.1.8)

Cloud Architecture and Document Management Capabilities

The CC-PM EDMS is designed to enhance productivity, compliance, and user experience by providing intuitive interfaces and automated tools for document organization, retrieval, and lifecycle management.

1. Cloud Architecture and Security

The CC-PM EDMS is built on **AWS Government Cloud** infrastructure, ensuring high availability, scalability, and compliance with security standards such as **NIST 800-53, FedRAMP, and HIPAA**. The design prioritizes data protection, access control, and resilience across all WVBOM use cases.

- **End-to-End Encryption:** All documents and media files are encrypted both at rest and in transit using AES-256 and TLS 1.2+ protocols.
- **Role-Based Access Control (RBAC):** Access to documents is governed by role, user group, and functional area, preventing unauthorized viewing or modification.
- **Immutable Audit Logs:** Every upload, update, or deletion is logged with timestamp, user ID, and action type for full traceability and audit compliance.
- **Data Redundancy & Disaster Recovery:** Replicated data storage across multiple availability zones ensures zero data loss and high system uptime.

2. Integrated Document Management Capabilities

The EDMS integrates natively with CC-PM's licensing, compliance, and renewal modules, enabling direct access to relevant documents from within each case or record. This eliminates manual document handling and ensures contextual visibility.

- **Direct Attachment Integration:** Staff can attach or view documents directly within applicant or licensee records.
- **Version Control:** Tracks document revisions automatically, preserving prior versions for audit or rollback.

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- **Metadata Tagging:** Automated and manual tagging by document type, date, and user-defined fields for quick retrieval.
- **Automated Retention Policies:** Documents follow configurable retention and archival rules aligned with WVBOM's records management policy.

3. User-Friendly Interface and Navigation

The CC-PM EDMS provides an intuitive, web-based interface accessible from any device with role-based credentials. Designed with usability in mind, the system minimizes training needs and streamlines daily document handling.

- **Drag-and-Drop Uploads:** Simplifies document submission for both staff and applicants.
- **Advanced Search and Filters:** Enables rapid document retrieval using keywords, metadata, or associated case ID.
- **Preview and Annotation Tools:** Users can preview PDFs, images, and media directly in the browser and add internal annotations without downloading.
- **Batch Processing:** Supports mass uploads, downloads, or archival actions to improve efficiency.

4. Collaboration and Communication Tools

The EDMS fosters secure collaboration across WVBOM departments while maintaining strict confidentiality and access control.

- **Shared Workspaces:** Authorized users can collaborate on case files or disciplinary reviews within defined access parameters.
- **Automated Alerts:** Notifications for new uploads, expiring documents, or pending review tasks are delivered to relevant users.
- **Secure Messaging:** Document-level comment threads allow for internal communication without using email attachments.

5. Mobile and Accessibility Features

Accessibility and mobility are core design principles of the CC-PM EDMS, ensuring flexibility for staff and licensees in various environments.

- **Mobile-Optimized Interface:** Fully responsive across tablets and smartphones with no loss of functionality.
- **WCAG 2.1 Level AA Compliance:** Ensures accessibility for users with disabilities, aligning with state and federal accessibility mandates.
- **Offline Access:** Temporary local caching allows users to review recently accessed documents when connectivity is limited.

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3.9. Outline Hardware/Software, and Integration Specifications with Support for WVBOM Website Design and Hosting (RFP Section 4.2.1.9)

The CardyCares Provider Management (CC-PM) solution is a fully cloud-native, modular platform engineered for secure, scalable, and high-availability operations. The system is deployed in a FedRAMP-authorized AWS GovCloud environment, ensuring that all infrastructure components support state and federal security and compliance mandates. Through this cloud-first design, WVBOM avoids investment in on-premises hardware; all compute, storage, and networking services are provisioned dynamically to support licensing volume growth, public-facing traffic, and expanding business functions.

Core Hardware & Hosting Infrastructure

- **Compute Resources:** Auto-scaled virtual compute clusters optimized for application workloads, orchestrated through Amazon Elastic Kubernetes Service (EKS).
- **Storage:** Encrypted object and block storage using Amazon S3 and EBS, with version control, lifecycle policies, and automated backups.
- **Disaster Recovery:** Multi-AZ architecture with cross-region replication, automated failover, and documented recovery procedures.
- **Network Security:** AWS Web Application Firewall (WAF), Virtual Private Cloud (VPC) segmentation, security groups, and DDoS mitigation through AWS Shield Advanced.

Core Software Components

- **Application Layer:** A containerized microservices architecture deployed on AWS EKS. Stateless services built using Node.js support high availability, modular growth, and streamlined maintenance.
- **Database Layer:** Amazon RDS for PostgreSQL with multi-AZ redundancy for transactional consistency and performance. ElastiCache (Redis) for session caching and high-speed lookups.
- **Document Storage Layer:** AWS S3-based Enterprise Document Management System (EDMS) with encryption, versioning, and intelligent tiering.
- **Integration Layer:** AWS API Gateway, WSO2 Enterprise Service Bus (ESB), and AWS EventBridge for secure communication between internal modules, external systems, and the WVBOM website.
- **Security Layer:** AWS IAM, AWS Cognito, KMS encryption (AES-256), TLS 1.2+, CloudTrail logging, GuardDuty threat detection, and AWS Certificate Manager (ACM) for certificate lifecycle management.

This cloud infrastructure supports 99.9% uptime and rapid disaster recovery with an RPO under 15 minutes.

Technical Architecture of the CC-PM Solution

The CC-PM solution is built on a microservices-driven, cloud-native architecture hosted in AWS

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GovCloud. The following summarizes the platform's key components:

Presentation Layer

- Angular-based Single Page Application (SPA) hosted on Amazon S3 and distributed via Amazon CloudFront.
- Fully responsive, WCAG 2.1 AA–aligned user interface.
- Role-aware dashboards, advanced search, and guided workflows.

Business Logic Layer

- Stateless Node.js microservices containerized in Docker.
- Orchestrated via Amazon EKS with auto-scaling.
- Internal communication secured by IAM roles; external API access via API Gateway with integrated WAF.
- Implements business rules, validations, workflow automation, and task orchestration.

Data Layer

- Amazon RDS PostgreSQL for primary structured storage.
- ElastiCache for reducing latency and accelerating lookups.
- Amazon S3 for unstructured content with encryption and lifecycle management.

Integration Layer

- WSO2 ESB and AWS EventBridge support REST, SOAP, SFTP, and message queue integrations.
- API logging and monitoring through CloudWatch and ELK stack.

Reporting and Analytics

- AWS QuickSight for dashboards and interactive analytics.
- SQL querying against S3-based datasets for advanced reporting.
- Audit trails through CloudTrail and system performance monitoring via CloudWatch.

Security Layer

- TLS 1.2+ encryption, IAM role-based controls, and AWS-native threat detection tools.
- Application security via SonarQube static analysis and ImmuniWeb dynamic testing.
- RBAC with fine-grained permissions and comprehensive audit logging.

OWASP Risk Mitigation

- Mitigation of OWASP Top 10 risks through input validation, strong authentication, encryption, CSP headers, code scanning, and secure session management.
- Continuous monitoring through AWS GuardDuty, Inspector, and Security Hub.

Identity & Access Management

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- AWS IAM and Cognito, with integration support for SAML 2.0, OAuth 2.0, OpenID Connect, Azure AD/Entra ID, and Okta.
- MFA, granular RBAC, and session control features.

Observability & Monitoring

- CloudWatch, X-Ray, CloudTrail, and ELK stack for distributed tracing, structured logging, and performance dashboards.
- Real-time alerts for anomaly detection and operations oversight.

Scalability & High Availability

- Horizontal scaling across EKS microservices.
- Multi-AZ redundancy for RDS, ElastiCache, and S3.
- Auto-scaling based on traffic and workload demand.

DevSecOps

- CI/CD pipelines using AWS CodePipeline or Azure DevOps.
- Automated scanning with SonarQube and ImmuniWeb.
- Artifact storage in Amazon ECR; deployments managed using GitOps and Helm charts.

Infrastructure as Code (IaC)

- Terraform and CloudFormation templates for repeatable, auditable provisioning.
- Automated secrets management via AWS Secrets Manager.

Environments

- Isolated Dev, Test, Staging, UAT, and Production environments with separate VPCs.
- Data masking and anonymization for non-production.

Data Compliance

- Built to comply with HIPAA, FERPA, PCI, CCPA, and State security requirements.
- Encryption at rest and in transit using AES-256 and TLS 1.2+.
- Supports configurable retention and purging policies.

Data Backup & Restore Strategy

- Automated RDS snapshots and S3 versioning.
- Point-in-time recovery.
- Regular DR drills and documented restore procedures.

Disaster Recovery & Business Continuity

- Multi-AZ deployments and automated failover for critical services.
- RTO < 15 minutes, RPO = 1 hour.

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- IaC-driven recovery scripts for rapid restoration.

Integration with WVBOM Website

The CC-PM solution integrates directly with the **WVBOM's public website** through secure RESTful APIs and data publishing services. This integration allows the website to display real-time, publicly available license and disciplinary data without manual updates or duplicate entry.

- **Two-Way Data Exchange:** Enables automated synchronization between the CC-PM database and the WVBOM website.
- **Customizable Widgets:** Embeddable search and verification components for license lookup and public record viewing.
- **Secure APIs:** Fully encrypted and authenticated using OAuth 2.0 and JWT tokens to ensure compliance and data integrity.

Website Design, Development, and Hosting Capabilities

Cardinality can fully design, implement, and host a **WCAG 2.1 Level AA and Section 508-compliant website** for WVBOM that is responsive, secure, and optimized for public accessibility.

Capabilities Include:

- **User-Centered Design:** Intuitive layouts for public users, licensees, and board staff.
- **Accessibility Compliance:** Meeting all ADA and WCAG 2.1 AA requirements, including keyboard navigation, screen reader compatibility, and color contrast standards.
- **Responsive Design:** Optimized for desktop, tablet, and mobile devices.
- **Brand Alignment:** Incorporation of WVBOM's visual identity and communication style.
- **Secure Hosting:** In the same FedRAMP environment as CC-PM for unified management, monitoring, and security patching.
- **Content Management:** Self-service administrative tools for WVBOM staff to update site content, forms, and announcements without vendor intervention.

Features That Exceed RFP Specifications

The CC-PM solution provides several **value-added capabilities** beyond the stated specifications, reinforcing scalability, transparency, and long-term sustainability:

- **AI-Powered Data Insights:** Embedded analytics tools for performance monitoring and predictive reporting.
- **Configurable Portal Themes:** Customizable user interfaces for different license types or user groups.
- **Multi-Language Support:** Framework supporting English and additional languages if required.
- **Integrated Knowledge Management System (KMS):** Central repository for procedural documents, FAQs, and policy guidance.
- **Built-In LMS:** Enables continuous learning and certification tracking for staff and stakeholders.

a) Real-Time Verification APIs

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- **Instant License Validation:** External stakeholders such as hospitals, insurance providers, and government agencies can verify licenses programmatically via a secure API.
- **Data Accuracy:** APIs pull directly from the authoritative CC-PM database, ensuring up-to-date results.
- **Customizable Access Rules:** WVBOM can grant API access to approved entities, controlling the scope of data exposed.

Value to WVBOM: Reduces inbound verification calls/emails, improves stakeholder trust, and accelerates decision-making for credential-dependent processes.

b) Single Sign-On (SSO) Integration

- **Support for State Identity Providers:** Compatible with SAML 2.0, OAuth 2.0, and OpenID Connect standards.
- **One-Click Access:** Staff and licensees can log in using their state or institutional credentials.
- **Centralized Account Management:** Streamlines onboarding/offboarding for staff and external partners.

Value to WVBOM: Improves security by eliminating duplicate credentials and supports rapid account provisioning.

c) Advanced Analytics & Reporting

- **Integrated Dashboards:** Visualize licensing trends, complaint processing timelines, and workload distribution.
- **Custom Report Builder:** Staff can design and schedule ad hoc reports without vendor intervention.
- **Predictive Analytics:** Uses historical data to forecast licensing volumes, renewal peaks, and resource needs.

Value to WVBOM: Supports evidence-based decision-making, capacity planning, and performance monitoring.

3.10. Implementation Plan and Timeframe for Database and System Components (RFP Section 4.2.1.10)

Cardinality proposes a **12- months implementation schedule** supported by our proven delivery approach and the existing CC-PM licensing framework. Our recent state licensing implementations demonstrate our ability to configure, migrate, integrate, and deploy enterprise licensing systems within one year while maintaining compliance and operational continuity. In alignment with the Board's stated preference, Cardinality will deliver a full, all-at-once implementation, with all licensing, renewals, discipline, compliance, payment, and public portal capabilities deployed together during the Month 12 go-live.

Our implementation methodology is explained below:

1) Initiate & Discover (Months 1–2)

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a) **Kick-off & Planning (Month 1):** Cardinality's Project Manager (Stacy Night) will conduct a formal project kick-off with WVBOM stakeholders. This session will validate goals, confirm governance, outline communication protocols, and finalize the project charter. Early deliverables include the Requirements Traceability Matrix, Gap Analysis, and Business Process Analysis Document.

b) **Requirements Validation & Gap Analysis (Month 1):** Detailed workshops with licensing, disciplinary, administrative, and IT teams will verify all functional and technical requirements. Gaps between current operations and CC-PM capabilities will be documented and addressed through configuration or enhancement planning.

c) **Solution Design (Month 2):** Business Analysts and Solution Architects will draft user stories and prepare the first versions of the System Design & Development Plan, including system architecture, configuration models, workflow definitions, and data structures. Supporting deliverables include the System Interfaces Plan (covering EGov, public search, FSMB UA/FCVS, VeriDoc, IMLCC, and internal systems) and the Organizational Change Management Plan.

d) **Release & Project Planning (Month 2):** The Project Management Plan and detailed Work Plan and Schedule will be finalized, including sprint timelines, resource assignments, and release milestones. The draft User Acceptance Test (UAT) Plan will be prepared to guide WVBOM staff during testing.

2) Configure (Months 3–8)

a) **Configuration & Customization (Months 3–8):** Cardinality will deliver six iterative sprints and will configure CC-PM modules covering licensing, renewals, disciplinary case management, communications, audit trails, payments, reporting, and document management. Each sprint includes backlog refinement, configuration, QA, demonstrations, and iterative validation with WVBOM staff.

b) **Interfaces & Integration (Months 3–8):** Integration requirements will be refined with WVBOM IT and external partners. Interfaces with WVSTO EGov payments, FSMB services, VeriDoc, IMLCC, and the WVBOM public website will be developed and validated through system integration testing.

c) **Data Conversion & Migration (Months 3–8):** Migration cycles will cover mapping, cleansing, data transformation, and mock loads. A formal Data Conversion Plan will ensure accurate migration of licensing history, disciplinary records, credentials, and associated metadata.

d) **End-to-End Testing (Months 3–8):** Comprehensive testing will validate full workflow behavior across licensing, renewals, compliance, case management, financial processing, and document features. Regression, performance, and security testing ensure system readiness.

3) Deploy (Months 9–12)

a) **System, Regression, Performance & Security Testing (Month 9):** CC-PM will undergo performance testing, regression analysis, and security validation to ensure compliance with

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WVBOM and state cybersecurity requirements, including access controls, audit trails, and data protection protocols.

b) **Training (Months 4–10):** A blended training program including manuals, step-by-step guides, video tutorials, scenario-based exercises, and hands-on sessions will prepare licensing staff, disciplinary staff, IT administrators, and leadership for full system adoption.

c) **Communications & UAT (Month 10):** WVBOM business users will conduct UAT to validate functionality, confirm business rules, and identify refinements. The Cardinality team will document findings, resolve issues, and coordinate formal module sign-off.

d) **Implementation & Cutover Planning (Month 11):** Activities include final data conversion coordination, configuration freeze, readiness assessments, go-live checklists, and rollout planning. All risks and dependencies will be tracked to ensure a smooth transition to production.

e) **Release & Go-Live (Month 12):** The CC-PM solution will go live with complete licensing, renewal, disciplinary, document management, payment processing, and public lookup functionality. Cutover validation, stabilization checks, and coordinated support ensure operational continuity.

f) **Warranty Period (Months 13–15):** Following go-live, Cardinality will provide a warranty period to support stabilization, issue resolution, minor refinements, and ongoing collaboration with WVBOM to ensure system confidence and performance consistency.

4) **Support (Months 16–75)**

a) **Maintenance & Operations:** After final acceptance, Cardinality's Service Manager and Help Desk will provide ongoing support, including incident resolution, enhancements, security updates, and maintenance releases. Service Level Agreements (SLAs) will guide response and resolution times. Monthly service reports, change requests, and release documentation will be shared with WVBOM to maintain transparency and ensure continued operational alignment.

All required technical documentation Workflow Specifications, Functional & Technical Design Documents, Interface/Integration specs, Help Guides, and Migration Plans will be delivered to WVBOM on schedule. Cardinality will follow the proposed timeline to support smooth implementation and long-term solution success.

The proposed project timeline is depicted in **Figure 31** below.

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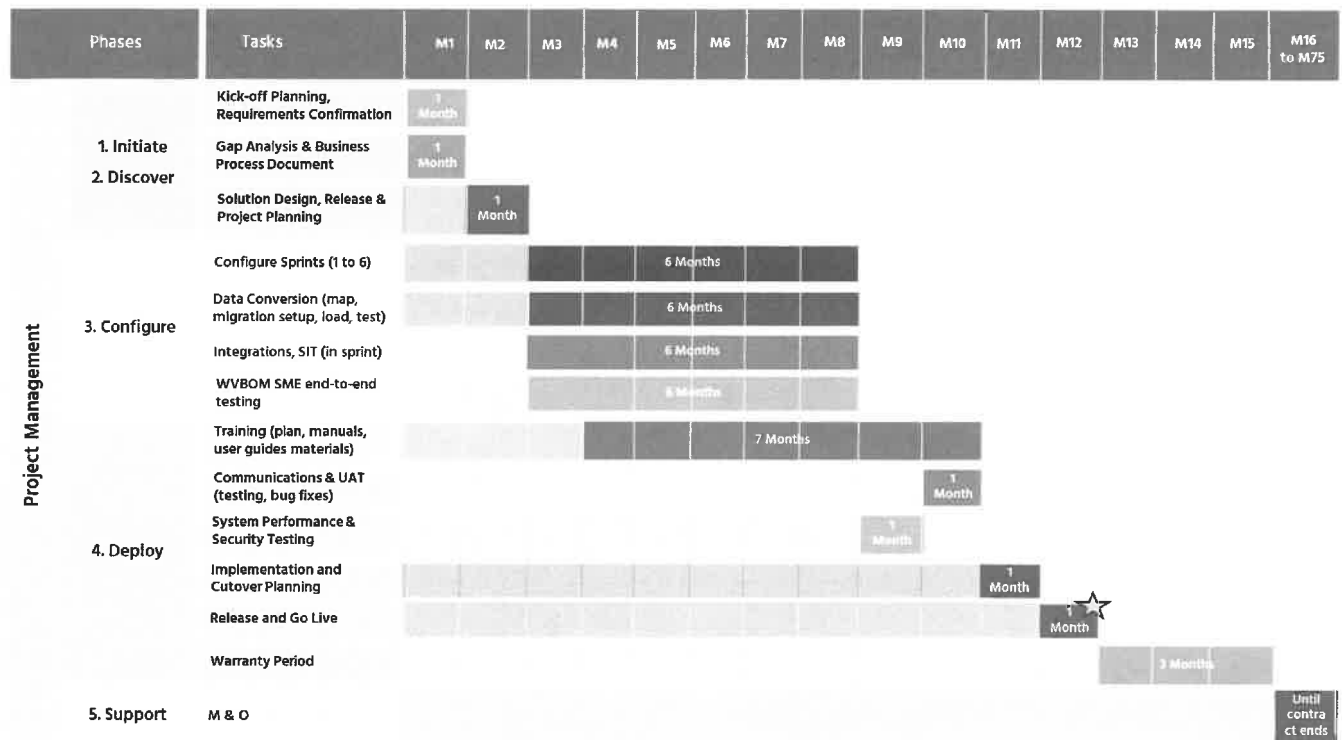
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Figure 31: Implementation timeline

3.11. Ongoing Technical Support, Maintenance, and Staffing Plan for Change Orders and System Updates (RFP Section 4.2.1.11)

Cardinality will provide WVBOM with a comprehensive, structured, and responsive support framework to maintain the CardyCares Provider Management (CC-PM) solution in optimal operating condition throughout the contract term. Our approach combines proactive system monitoring, rapid-response incident resolution, regular preventive maintenance, and a defined change management process to address evolving requirements.

1. Support Structure and Service Model

Cardinality provides a structured, multi-tiered support model to address the operational needs of the WVBOM and the CC-PM solution. Our support structure includes Tier 1, Tier 2, and Tier 3 support channels, all backed by detailed standard operating procedures (SOPs), robust knowledge management tools, and experienced personnel available during business hours and on-call after hours.

Tier 1 Support: WVBOM may choose to provide Tier 1 support internally through its existing Help Desk team. If desired, Cardinality can also offer Tier 1 support at an additional cost during contract negotiations. When Tier 1 support is handled by WVBOM , Cardinality will provide onboarding, documentation, and knowledge transfer to equip Help Desk agents with the tools and access needed to assist end users.

To enhance user self-service and streamline Tier 1 support, the CC-PM solution includes:

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- **Self-service tools** such as "Forgot Password" and Multi-Factor Authentication (MFA)
- An integrated **Chatbot Assistant**
- A **Knowledge Management System (KMS)** offering FAQs, how-to guides, and video tutorials
- An **in-application support request module** for direct ticket creation and status tracking
- **Role-Based Access Control (RBAC)** for Tier 1 staff to manage user roles, accounts, and permissions

Unresolved issues at the Tier 1 level can be escalated via multiple channels:

- In-system contact support feature
- **CARDY** Ticketing Tool (our ITSM platform)
- **Designated support email address**
- **Direct phone access** to product support engineers for urgent matters

Tier 2 Support: Cardinality's Tier 2 engineers handle escalated issues that involve application behavior, user account configuration, workflow irregularities, or module-specific errors. These support specialists:

- Perform root cause analysis using system logs, configurations, and query tools
- Apply configuration adjustments or database-level updates
- Maintain a knowledge base of known issues and solutions
- Monitor ticket trends and proactively identify systemic concerns

Tier 3 Support: Our Tier 3 team consists of experienced engineers, product specialists, and architects who address complex or high-impact issues. This team:

- Provides advanced application and database troubleshooting
- Delivers emergency code fixes and patch deployments when required
- Offers strategic guidance to Tier 2 for recurring or cross-cutting issues
- Supports enhancements, SOP updates, and continuous improvement of documentation

Hours of Operation & Escalation:

- **Standard Support Hours:** Monday–Friday, 8:00 AM to 6:00 PM Eastern time (EST)
- **Emergency On-Call Support:** Available 24/7 for critical production outages (Severity 1)
- **Response Time:** On-call engineers respond to emergency alerts within 15 minutes and initiate triage procedures immediately

Communication Channels:

- **Phone** – Direct hotline to on-call engineer (for Severity 1 cases)
- **Email** – Dedicated support address for ticket creation and updates
- **Web-based CARDY Ticketing Tool** – For issue tracking and audit logs
- **Chatbot Assistant** – Embedded in the application for quick triage and routing
- **Knowledge Management Portal** – Self-service access to SOPs, training materials, FAQs, and videos

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Our support and help desk process is designed to meet WVBOM's operational needs while offering flexibility for future service-level adjustments

2. Preventive Maintenance and System Updates

We maintain system stability through:

- **Scheduled Maintenance Windows** for applying patches, version upgrades, and security updates.
- **Performance Optimization** – Monitoring transaction times, API performance, and database efficiency.
- **Security Hardening** – Quarterly vulnerability scans, penetration testing, and rapid patching of any identified risks.
- **Regulatory Compliance** – Ensuring the platform continues to meet HIPAA, PII, WCAG 2.1 AA, and state security requirements.

3. Change Order and Enhancement Process

Cardinality follows a formalized change management process aligned with ITIL best practices, ensuring that all updates and enhancements are delivered in a controlled, predictable, and auditable manner.

- **Request Intake** – WVBOM submits a change or enhancement request through our secure service portal or via the assigned Project Manager. Each request is logged, categorized, and assigned a priority level.
- **Impact Assessment** – Our technical and functional teams jointly evaluate the request to determine its effect on workflows, integrations, security, and compliance with applicable regulations. Risks, dependencies, and resource requirements are identified.
- **Effort Estimation & Approval** – A detailed proposal is prepared outlining the scope, resource plan, estimated cost (if applicable), and delivery timeline. WVBOM reviews and formally approves before any development work begins.
- **Implementation** – Approved changes are developed in a controlled staging environment, with full regression testing to confirm compatibility with existing modules and workflows.
- **Deployment** – The change is migrated to the production environment during a scheduled release window, with rollback and contingency plans prepared in advance.
- **Post-Change Validation** – Our team conducts a structured verification process with WVBOM stakeholders to ensure the change is functioning as intended and that supporting documentation and training materials are updated.

4. Post-Go-Live Support Structure and Resource Commitment

To maintain optimal system performance and address evolving WVBOM needs, Cardinality provides a **structured, multi-role support framework** that blends dedicated points of contact with subject matter expertise at multiple technical levels.

Primary Point of Contact

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Stacy Night - Project Manager will be assigned as WVBOM's central liaison for all post-go-live activities. This individual will:

- Serve as the first escalation point for unresolved issues.
- Coordinate cross-team response efforts and ensure service levels are consistently met.
- Prioritize incoming requests in collaboration with WVBOM stakeholders.
- Schedule periodic operational and performance review meetings.

Specialized Support Functions

Instead of isolating support purely by tier, our structure organizes resources based on **responsibility and depth of expertise**:

- **User Assistance and Access Management:** Application Support Analysts address day-to-day questions, user account changes, and basic troubleshooting. This function may be performed by WVBOM staff to optimize costs, with Cardinality providing training and backup assistance.
- **Configuration and Integration Support:** Technical Support Engineers handle more complex needs such as workflow adjustments, form and report modifications, and integration troubleshooting. They have direct access to system configuration and integration logs.
- **Advanced Product Engineering:** Development Engineers and Product Specialists manage deep technical changes including code-level bug fixes, new feature development, performance tuning, and architecture updates. This group also leads patch and version upgrade deployments.

Collaborative Escalation Path: Issues are triaged at intake, with the Support Manager directing them to the appropriate resource group. Escalations follow a documented path from user assistance to advanced engineering, ensuring rapid resolution with minimal operational impact.

5. Continuous Improvement and Knowledge Transfer

Cardinality treats post-go-live operations as an opportunity to refine and enhance the system based on real-world usage. Our approach includes:

- **Proactive System Reviews** – Scheduled assessments to identify performance optimization, security updates, and functional enhancements that can improve WVBOM's operational efficiency.
- **User Feedback Loops** – Gathering structured feedback from WVBOM staff and end-users to guide prioritization of updates and feature enhancements.
- **Knowledge Base Development** – Maintaining a curated repository of how-to guides, troubleshooting steps, and release notes accessible to WVBOM staff.
- **Hands-On Training Sessions** – Conducting periodic refresher and onboarding sessions to keep staff current on new features, configuration changes, and best practices.
- **Change Adoption Support** – Providing guidance and communications for staff when new modules, workflows, or integrations are introduced, ensuring smooth adoption.

This model sustains the CC-PM solution as a **reliable, secure, and adaptable** platform, aligned with WVBOM's operational priorities and regulatory obligations. By combining **direct access to product**

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decision-makers, a **mature change management framework**, and **dedicated post-implementation resources**, WVBOM will have a licensing system that can evolve with policy changes, technological advancements, and stakeholder needs for the entire duration of the contract.

3.12. Training Plan For WVBOM Staff (RFP Section 4.2.1.12)

Cardinality will deliver a comprehensive training program and supporting materials to prepare WVBOM staff and administrators to effectively use, manage, and maintain the CC-PM Solution. Our training is designed to align with system configuration, role-based security, User Acceptance Testing (UAT), and real-world workflows for licensure, inspection, compliance, and reporting.

The training deliverables consist of the following activities:

- **Identify User Base:** Cardinality will identify the user base and analyze training needs to assess learning capabilities and learners' needs.
- **Determine Performance goals:** The approach will involve creating a comprehensive training strategy focused on improving employee proficiency, streamlining processes, and ensuring better compliance. To achieve this, we will prioritize developing the user's skills in system navigation and application proficiency while providing troubleshooting and support.
- **Content Creation:** Cardinality will develop training modules with process flows, screenshots, and step-by-step instructions.
- **Creation of Participant Group List:** The process involves compiling a list of participants, enrolling them in the training, and tracking their attendance.
- **Conduct Training:** The team will conduct a **Train-the-Trainer** session with agency-identified trainers who can then handle the future training sessions. We provide a blended learning experience that combines self-paced and web-based training with instructor-led sessions. We will also offer additional materials to support knowledge retention and application.
- **User Training Material Development:** The team will develop engaging, hands-on training material after identifying training content and gathering pertinent information. We will also conduct a content-gap analysis to update relevant sections and communicate these changes to the participants, ensuring that the updated training materials are easily accessible to them.

The recommendation is to train the staff in a variety of media, including videos/online courses, live training sessions, and practice sessions. The documentation ensures that training materials are regularly updated to align with evolving project requirements. The illustration below (**Figure 32**) demonstrates our Training approach:

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Training Approach

Training Program Development based on Instructional System Design Methodology

Planning	Analysis	Design	Development	Deployment
Needs assessment	Assess Skill Set	Curriculum	User Guides	Training sessions
Schedule	System Functionality	Course Structure	Job Aids	E-Learning
Logistics		Demos	Videos	WebEx recordings
# of Users by Role	Templates		Evaluations	Self Learning
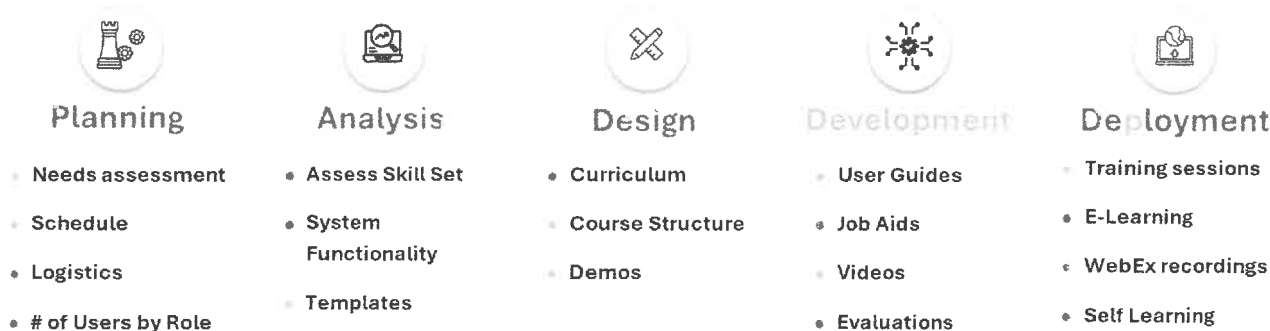
- The training courses will be customized to the needs and skill level of each user group. For example: Administrator, Supervisor, Caseworker.
- A learning management system (LMS) will be utilized to schedule, monitor, track and report on all training sessions

Figure 32: Cardinality's Training Approach

Training Development and Planning

- **Role-Based Needs Assessment:** We will work with WVBOM to identify user groups such as licensing staff, inspectors, system administrators, and public-facing support roles and assess training needs based on their responsibilities and security access levels.
- **Clear Learning Objectives:** Training modules are designed around key processes, including license application intake, renewals, inspection scheduling and forms, complaint tracking, document management with external systems including FSMB Uniform Application, FCVS, VeriDoc, and the WV State Treasurer's E-Gov payment system.
- **Tailored Content:** All training materials are customized to reflect WVBOM's configured workflows, using practical scenarios, annotated screenshots, and step-by-step guidance.

Training Delivery Approach

- **Train-the-Trainer Model:** Our team will deliver live sessions to designated WVBOM trainers and key staff so that they can provide ongoing knowledge transfer and onboarding for new users.
- **Blended Learning Format:** Training combines live virtual sessions, recorded modules, interactive e-learning, and hands-on exercises to accommodate different learning styles and reinforce retention.
- **Tracking and Feedback:** We will assist in scheduling sessions, tracking attendance, gathering feedback, and addressing any gaps to support consistent knowledge transfer across all user groups.

Documentation and Reference Materials

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- **User Guides & Job Aids**: Comprehensive materials, including quick reference guides, process overviews, and step-by-step manuals, will be delivered in digital formats accessible across devices.
- **Knowledge Center**: All training documentation will be centrally accessible through an integrated help center and updated periodically to reflect system changes.
- **Administrator Support**: Specialized materials for system administrators will cover managing user accounts, role-based security, audit logging, workflow configuration, and integration points (e.g., FSMB Uniform Application, FCVS, VeriDoc).

Cardinality's goal is to equip WVBOM with the skills, tools, and ongoing reference resources needed to confidently adopt the new Medical Licensure / Records Database Maintenance System, streamline day-to-day operations, and maintain long-term self-sufficiency. Ongoing post-launch support will be available to help staff access materials and continue building expertise as the system evolves.

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4. Mandatory Project Requirements (RFP Section 4.2.2)

4.1. Database System (RFP Section 4.2.2.1)

1. Modernized Cloud-Native Database Solution

The proposed **Cardinality CC-PM Database Solution** is a **secure, cloud-hosted, modular platform** purpose-built for regulatory and licensing boards. It provides a modern, web-based environment for all licensing, credentialing, enforcement, and reporting functions, fully eliminating dependency on desktop hardware or client-side installations. The solution will operate within **AWS GovCloud (US)** to align with federal and state compliance requirements, leveraging a highly available **Amazon RDS for PostgreSQL** cluster for structured data storage and the platform's **Enterprise Document Management System (EDMS)** built on **Amazon S3** for secure, scalable document storage and archival.

All core functions data entry, search, processing, reporting, and communication are accessible through a **role-based web portal**, supporting both internal users and external stakeholders. The architecture ensures streamlined operations, high data integrity, and compliance with state and federal data governance policies.

2. End-to-End Implementation and Deployment Timeline

Cardinality will deliver the full CC-PM solution within the 12 months period following contract award. The deployment will follow our **structured Implementation Roadmap**, encompassing phases for Requirements Validation, Configuration and Development, System Integration, User Acceptance Testing (UAT), Training, and Production Go-Live. Each phase is executed with collaboration between WVBOM and Cardinality project teams, supported by comprehensive documentation and risk management controls.

3. Comprehensive Data Migration Strategy

Cardinality's **Data Migration Framework** enables secure, complete, and validated transfer of all data from WVBOM's legacy database and other historical sources.

- **Discovery and Mapping:** Detailed assessment of legacy schema, data dependencies, and transformation rules.
- **Cleansing and Standardization:** Data deduplication, format normalization, and validation against target fields.
- **Secure Transfer:** Encrypted data pipelines ensure confidentiality and integrity during migration.
- **Verification and Testing:** Dual-validation checkpoints confirm accuracy and completeness before cutover.

This structured approach minimizes downtime and safeguards institutional knowledge embedded in historical records.

4. Comprehensive Repository and Indexing Capabilities

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The CC-PM Database includes an integrated **Electronic Document Management System (EDMS)** that provides indexing and storage for all application, renewal, disciplinary, malpractice, and historical records. Each document is tagged with metadata (e.g., document type, date, license number, and owner) for rapid search and retrieval. Features include:

- **Full-Text Search:** Enables instant retrieval by keywords or record type.
- **Version Control:** Preserves prior document revisions for audit and legal reference.
- **Automated Retention Policies:** Supports recordkeeping compliance and archival requirements.
- **Audit Trails:** Tracks all document interactions for transparency and compliance.

5. Public Website Integration and Real-Time License Verification

The CC-PM solution integrates with **WVBOM's public website (https://wvbom.wv.gov)** through secure REST APIs. This provides **real-time verification** capabilities, enabling the public to search for licensees by name, credential type, authorization status, malpractice history, or disciplinary action. Key attributes:

- **Immediate Data Synchronization:** Public data views update automatically upon approval or renewal actions.
- **Document Access:** Authorized disciplinary documents can be viewed directly online.
- **Zero-Cost Public Search:** Provides public transparency without additional fees or system constraints.

6. Role-Based Access Control and Internal Dashboards

Access to system functions is governed by **granular Role-Based Access Controls (RBAC)**. Permissions are defined at the level of user group, division, or functional area, ensuring each staff member can view and act only on data relevant to their duties.

- An intuitive web-portal dashboard built with **Angular** and hosted on **AWS Elastic Kubernetes Service (EKS)** will provide authorized WVBOM staff with tools to manage member data, monitor workflows, and conduct communications.
- Authorized staff will be able to send targeted email notifications to individuals, defined cohorts, or the entire membership registry, without character count restrictions. All communications will be logged and stored in accordance with legal and compliance retention policies.

7. Integrated Communication and Branding Features

The system incorporates a **built-in communication engine**, enabling WVBOM staff to send emails or notifications to individual members, groups, or specific cohorts.

- **Unlimited Message Composition:** No character restrictions or template limits.
- **Message Logging:** Each sent message is automatically attached to the member's record for audit purposes.
- **Branded Templates:** All outbound communications, licenses, certificates, and reports reflect WVBOM branding standards, including logos, signatures, and formatting guidelines.

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8. Interoperability and API Integrations

The CC-PM platform supports a suite of **standards-based APIs** (REST/JSON, XML) to enable interoperability with trusted third-party systems, including:

- **VeriDoc** for credential verification.
- **Federation of State Medical Boards (FSMB)** for the Uniform Application for Licensure.
- **Interstate Medical Licensure Compact Commission (IMLCC)** for compact licensing coordination.

APIs are secured with **OAuth 2.0** protocols and token-based authentication to maintain data privacy while facilitating authorized system-to-system data exchange.

Value to WVBOM

Through its modular design and integrated architecture, the CC-PM Database Solution positions WVBOM for long-term scalability, efficiency, and transparency. It provides:

- A **fully web-based, secure platform** with no desktop dependencies.
- **Automated workflows** that reduce manual intervention.
- **Future-ready extensibility** to accommodate new license types or credential categories.
- **Data-driven insights** supporting operational decision-making and policy planning.

4.1.1. Task Management (RFP Section 4.2.2.1.1)

The **CC-PM Solution**, built on Cardinality's **Empower Platform**, provides a robust **Workflow and Task Management Engine** designed to give WVBOM full control over its business processes without dependence on vendor intervention or technical coding. The platform empowers authorized WVBOM staff to **create, modify, and manage automated or ad-hoc workflows and tasks** through a simple, configuration-driven user interface.

1. Customizable Workflow Creation and Administration

Within the CC-PM administrative console, authorized users can:

- **Create new workflows** using an intuitive drag-and-drop process designer, defining task sequences, routing logic, and approval paths without programming.
- **Design task templates** to standardize recurring activities such as license reviews, renewal follow-ups, disciplinary case reviews, and compliance verifications.
- **Establish conditional logic and triggers**, allowing workflows to auto-initiate based on events (e.g., submission of an application, receipt of a payment, or disciplinary flag).
- **Assign workflows to user roles or departments**, ensuring that each process aligns with WVBOM's operational hierarchy and security policies.

Workflows can be dynamically adjusted as regulations, staffing, or policy requirements evolve eliminating dependency on vendor coding or software patches.

2. Automated and Ad-Hoc Task Generation

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The CC-PM solution supports both **automated and manual task creation**:

- **Automated Tasking:** System-generated tasks can be triggered by key events such as form submission, document upload, or status change.
- **Ad-Hoc Tasking:** Authorized staff can manually create tasks at any point within a case or record to address specific actions, such as requesting additional documentation or initiating internal review.
- **Linked Case Context:** Every task is associated with its parent entity (license, application, complaint, or investigation), allowing users to view all related actions and documents in one unified screen.

3. User Assignment and Workload Management

Task assignment is **role-based and configurable**, giving administrators flexibility to distribute workload efficiently:

- Tasks can be **automatically assigned** based on pre-defined business rules, such as license type, staff role, or case category.
- Supervisors can **reassign or escalate** tasks between users or departments as operational needs shift.
- A **workload dashboard** provides a real-time view of assigned, pending, and overdue tasks by user, team, or functional area.

This enables balanced task allocation and enhances accountability across the organization.

4. Comprehensive Reporting and Performance Tracking

The built-in **Task Analytics Dashboard** enables WVBOM to monitor workflow performance and productivity through visual, exportable reports:

- **Task Status Tracking:** Real-time metrics on completion rates, overdue tasks, and pending actions.
- **User and Team Performance Reports:** Identify process bottlenecks and track throughput by department or individual.
- **Audit Logging:** Every task action creation, modification, completion is recorded with timestamps, user ID, and workflow reference for full traceability.

These reports can be filtered, exported, or scheduled automatically, providing data-driven oversight for management and compliance review.

5. Smooth Integration with Document and Case Management

The CC-PM platform integrates task management directly with its **Enterprise Document Management System (EDMS)**. Each task can have associated supporting documentation such as application forms, disciplinary evidence, or correspondence files:

- **Contextual Attachments:** Staff can upload or view related documents directly from within the task record.

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- **Version Control and Access Management:** This allows only authorized users to modify or view sensitive materials.
- **Automated Document Triggers:** Completion of a workflow step can auto-generate letters, notifications, or certificates based on pre-defined templates.

This tight linkage between workflow, data, and documents creates an unbroken chain of operational transparency and efficiency.

6. Scalable, Secure, and Cloud-Optimized Infrastructure

The Task Management module leverages **AWS Government Cloud-native services**, ensuring enterprise-grade scalability, security, and performance:

- **AWS Lambda:** Powers serverless automation of workflow triggers, minimizing latency and reducing infrastructure overhead.
- **Amazon RDS (PostgreSQL):** Provides structured, relational data storage optimized for concurrent task activity.
- **Amazon CloudWatch:** Monitors task performance, usage metrics, and alerts for proactive operational management.

This architecture not only provides availability and reliability but also positions the system for future scalability as WVBOM's workload and user base expand.

Value to WVBOM

The CC-PM Workflow and Task Management framework delivers a **low-code, configurable environment** that enables WVBOM staff to:

- Independently design and manage new workflows.
- Respond rapidly to policy or process changes without vendor dependency.
- Gain real-time insight into operational performance.
- Maintain a consistent, auditable process across all licensing and compliance activities.

This capability transforms WVBOM's operational model from reactive task handling to **proactive, automated process orchestration**, supporting the Board's modernization and efficiency goals.

4.1.2. Auditing (RFP Section 4.2.2.1.2)

The **CardyCares Provider Management (CC-PM) Solution** includes a comprehensive **Audit and Compliance Engine** that records every data transaction, document activity, and user interaction across the system. The platform is designed to maintain full transparency, accountability, and data integrity in compliance with **state auditing standards, HIPAA, and NIST 800-53** controls.

1. Document and Data Change Audit Trails

Every action performed in the CC-PM system whether related to **scanned, uploaded, stored, archived, or retrieved documents** is automatically logged in a tamper-proof transactional audit record. Key capabilities include:

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- **Granular Event Logging:** Each system event (create, read, update, delete) is captured with metadata such as user ID, timestamp, source module, and affected record.
- **Immutable Records:** Audit data is stored in an immutable format that cannot be edited or deleted, ensuring a verifiable and legally defensible audit history.
- **Comprehensive Scope:** Activities covered include document uploads/downloads, license record edits, application approvals, disciplinary actions, and user role changes.
- **Historical Traceability:** Authorized users can generate and view historical change reports to compare data across time periods or verify the evolution of specific records.
- **User Attribution:** Each transaction clearly identifies the user performing the action, the date/time of the change, and the action taken, meeting forensic audit requirements.

Audit logs are available through the administrative dashboard, allowing staff to **search, sort, and export** audit records for internal or external reviews.

2. Configurable Audit Reporting and Monitoring

The system's **Audit Reporting Console** provides configurable tools to create and schedule reports tailored to WVBOM's oversight needs:

- **Historical Audit Reports:** Display data changes, document activity, and workflow events over a selected date range.
- **On-Demand and Scheduled Reporting:** Reports can be generated on demand or scheduled for automated delivery to designated compliance officers.
- **Filtering and Export Options:** Results can be filtered by user, date, document type, or record ID and exported to Excel, PDF, or CSV formats.
- **Automated Alerts:** The system can trigger notifications to compliance administrators when defined audit thresholds or anomalies are detected.

This enables proactive monitoring and supports periodic audits, investigations, and performance reviews without external tools.

3. Randomized Audit Sampling of Applicants and License Holders

To support compliance and quality control, the CC-PM Solution includes a **Random Sampling Tool** that enables staff to pull a random percentage of applicants or license holders directly from the database. Key features include:

- **Configurable Sampling Parameters:** Staff can define the percentage, time range, or population segment (e.g., new applicants, renewals, specific license types).
- **Automated Selection:** The system generates a statistically random list of records, ensuring unbiased sample generation.
- **Audit Integration:** Selected records are automatically tagged within the system for review, and related audit trails can be accessed for detailed examination.
- **Export and Reporting:** Sampling results can be exported to support formal audit reports or internal compliance tracking.

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This functionality simplifies compliance verification processes, internal audits, and quality assurance reviews, providing WVBOM with a defensible and repeatable audit mechanism.

4. Secure Infrastructure and Governance Controls

All audit data and logs are stored securely within the **AWS Government Cloud** environment, leveraging:

- **Amazon RDS (PostgreSQL):** For structured transactional audit data with built-in point-in-time recovery.
- **AWS CloudTrail and CloudWatch:** For infrastructure-level monitoring, anomaly detection, and log retention.
- **Encryption and Access Control:** AES-256 encryption at rest and TLS 1.2+ in transit, coupled with **Role-Based Access Control (RBAC)** to restrict access to audit records based on authorization level.

These controls provide WVBOM with complete transparency and accountability while maintaining compliance with security and data retention requirements.

Value to WVBOM

The CC-PM audit and reporting framework gives WVBOM the tools to:

- Maintain end-to-end traceability of all system actions.
- Conduct internal and external audits efficiently without manual tracking.
- Generate defensible, timestamped audit histories that meet regulatory standards.
- Perform random audits of licensees and applications to check process integrity.

This approach enables **trust, accountability, and operational oversight** across every component of WVBOM's modernized licensing and credential management environment.

4.1.3. Reporting (RFP Section 4.2.2.1.3)

The **CardyCares Provider Management (CC-PM) Solution**, built on the **Empower Platform**, offers a robust and fully configurable **Reporting and Communication Framework** that enables WVBOM staff to search, sort, filter, and generate reports across all licensing and financial data with ease. The system empowers authorized users to create both standardized and ad hoc reports without requiring technical or vendor assistance.

1. Search, Sort, and Filter Capabilities

The CC-PM incorporates a **unified search and filtering engine** across all modules Licensing, Renewal, Enforcement, and Payments allowing staff to locate and analyze records quickly. Key capabilities include:

- **Advanced Search Parameters:** Staff can query any data field (e.g., member name, license type, application status, payment date) and apply multiple filters simultaneously.

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- **Dynamic Sorting and Views:** Users can rearrange columns, group data, or save preferred table views for quick access.
- **Contextual Search:** Records can be located using keywords, partial matches, or date ranges, helping staff efficiently manage large data sets.
- **Real-Time Data Access:** Search results reflect live data updates, eliminating dependency on offline or outdated reports.

This design enables staff to track each member's application or renewal status at any point in the workflow and act promptly when intervention is needed.

2. Customizable Reporting and Data Export Tools

The system's **Report Builder** empowers WVBOM staff to design and generate reports directly from the user interface without any coding or scripting. Capabilities include:

- **Drag-and-Drop Report Designer:** Allows staff to select any database field, apply filters, define groupings, and calculate summaries (e.g., totals, averages, counts).
- **Save and Reuse Templates:** Customized report templates can be saved and reused across different data sets or reporting cycles.
- **Flexible Export Options:** Reports can be exported to Excel, PDF, or CSV formats for sharing, archiving, or analysis.
- **Real-Time Dashboards:** Visual dashboards provide at-a-glance insights into license volumes, pending applications, and financial metrics.

This feature provides WVBOM with complete control over reporting and analytics without reliance on vendor-developed reports.

3. Daily Financial Reporting and Revenue Tracking

The CC-PM Solution includes an integrated **Financial Management and Reporting Module** that consolidates all payment and transaction data across the system. Key features include:

- **Automated Daily Revenue Reports:** Generates detailed financial summaries of collected fees, broken down by member type, payment category, and payment method.
- **Real-Time Payment Reconciliation:** Payment data is automatically reconciled with member accounts, eliminating the need for staff to verify payments across multiple systems.
- **Drill-Down Views:** Staff can drill into individual transactions to view payer details, receipt numbers, and payment dates.
- **Summary and Totals:** Reports display both category-level and overall totals, ensuring accuracy and transparency in financial tracking.
- **Integration with Payment Gateways:** The platform interfaces securely with authorized payment providers and accounting systems to streamline financial management.

These reports are accessible from the administrative dashboard, enabling authorized staff to monitor daily collections and financial performance effectively.

4. Automated and Configurable Form Letter Generation

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The CC-PM platform provides an embedded **Correspondence and Form Letter Engine** that enables WVBOM staff to generate and distribute form letters directly from within the system. Key capabilities include:

- **Template-Based Design:** Staff can create and manage letter templates using merge fields (e.g., applicant name, license number, expiration date).
- **Automated Triggers:** Letters can be auto-generated based on system events, such as application approval, renewal reminders, or status changes.
- **Multi-Channel Delivery:** Letters can be sent via email, printed for mailing, or stored in the member's portal for secure access.
- **Version Control:** Template revisions are tracked with version history, allowing staff to maintain up-to-date communications.
- **Personalized Messaging:** Each letter dynamically incorporates applicant-specific data, ensuring accuracy and personalization in communications.

This capability enables consistent, timely, and professional communication between the Board and its licensees or applicants.

5. Architecture and Data Integrity Controls

All reporting and communication capabilities operate within the **AWS Government Cloud** environment, leveraging:

- **Amazon QuickSight and RDS (PostgreSQL):** For scalable analytics, real-time reporting, and data visualization.
- **AWS Lambda Functions:** To automate report scheduling, financial summaries, and letter generation triggers.
- **Access and Security Controls:** Role-Based Access Control (RBAC) allows only authorized personnel can create, view, or export reports.

This secure infrastructure makes sure that data integrity, confidentiality, and availability are maintained across all reporting and communication processes.

Value to WVBOM

The CC-PM Solution provides WVBOM staff with an integrated environment to:

- Track member status and operational metrics at any stage of the licensing lifecycle.
- Generate and schedule customized reports for compliance, financial, or management purposes.
- Access and reconcile revenue data from a single interface, improving fiscal transparency.
- Communicate efficiently with licensees using automated and customizable form letters.

This comprehensive approach minimizes administrative workload, enhances decision-making, and promotes operational efficiency across WVBOM's licensing and financial management functions.

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4.1.4. Disciplinary and Complaints Case Management and Reporting (RFP Section 4.2.2.1.4)

The **CardyCares Provider Management (CC-PM) Solution**, includes a dedicated **Complaints and Disciplinary Case Management Module** designed to manage the full lifecycle of complaints, investigations, and enforcement actions. The module enables WVBOM staff to record, assign, investigate, resolve, and report on complaints efficiently while maintaining full transparency, traceability, and compliance with record retention requirements.

1. Complaint Intake and Case Creation

The CC-PM system provides an integrated complaint intake process that captures all essential details from the moment a complaint is received whether via the public portal, email submission, or internal entry by staff. Key features include:

- **Configurable Complaint Forms:** Staff can define and update complaint categories, types, sources, and severity levels directly from the user interface without programming.
- **Automated Case Numbering:** Each complaint is automatically assigned a unique case identifier upon creation for tracking and reporting.
- **Multi-Channel Intake:** Supports complaint submission via online forms, uploaded documents, or staff-entered records based on phone or mail correspondence.
- **Initial Review and Assignment:** Complaints can be automatically routed to the appropriate investigator or department based on configurable business rules.

2. Investigation and Enforcement Tracking

The CC-PM Enforcement and Compliance module provides a structured framework for tracking every step of the investigative and disciplinary process. Key capabilities include:

- **Task and Deadline Tracking:** Each complaint includes system-generated milestones with target dates for investigation start, response due dates, and closure timelines.
- **Automated Date Tracking:** Key dates such as receipt date, investigation start, referral date, and resolution date are auto-populated and monitored by the system to prevent missed deadlines.
- **Role-Based Workflow Management:** Assigns tasks to investigators, reviewers, or legal staff based on role and workload.
- **Outcome Management:** Staff can record findings, recommended actions, and board decisions within the case record.
- **Escalation and Alerts:** Automated alerts notify staff of approaching deadlines or overdue actions to maintain compliance with procedural requirements.

3. Document and Media Management

The CC-PM Solution's integrated **Enterprise Document Management System (EDMS)** allows for secure and comprehensive storage of all supporting materials related to each case.

- **Supported File Types:** The system supports storage and retrieval of documents, images, videos, and audio recordings.

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- **Direct Case Linking:** Files are stored within the complaint record, ensuring easy access to evidence and supporting documentation during investigations.
- **Version Control and Audit History:** Each document retains revision history and metadata (upload date, user, file type).
- **Secure Storage:** All files are encrypted at rest and in transit within AWS Government Cloud storage, utilizing AES-256 encryption.

4. Historical Retention and Record Management

The CC-PM Solution provides configurable retention and archival policies aligned with **WVBOM's record retention standards**.

- **Indefinite Retention Capability:** Historical complaint and disciplinary records can be preserved indefinitely or for specific retention periods as determined by WVBOM policy.
- **Configurable Archival Rules:** Administrators can define when closed cases are archived and who retains access to them.
- **Comprehensive Audit Logs:** All case activities including edits, file uploads, and status changes are automatically logged with timestamps and user details.
- **Historical Case Retrieval:** Staff can search or filter historical complaints by case number, respondent, date, or outcome to support investigations or reporting.

5. Reporting and Analytics

The CC-PM platform includes built-in **reporting and analytics tools** that enable WVBOM staff to monitor complaint trends, enforcement outcomes, and case resolution metrics. Key features include:

- **Complaint Volume Dashboard:** Displays real-time data on open, pending, and closed cases.
- **Trend and Compliance Reports:** Provides visual and tabular reports on investigation durations, complaint categories, and disciplinary actions.
- **Customizable Queries:** Staff can design ad hoc reports filtered by case type, investigator, or timeframe without vendor assistance.
- **Export and Integration:** Reports can be exported to Excel, PDF, or integrated with Board meeting packages and audit summaries.

6. Scalability and Performance

The CC-PM Solution is architected for high scalability and consistent performance, leveraging **AWS Government Cloud's** elastic infrastructure to dynamically adjust to workload variations. Its **microservices-based and serverless architecture** enables horizontal and vertical scaling to support increased user activity, data volume, and case complexity without impacting response times or system availability.

The platform employs **containerized deployment** and **auto-scaling clusters**, ensuring optimal allocation of compute and storage resources as usage grows. Real-time monitoring through **Amazon CloudWatch** and intelligent scaling policies maintain predictable system performance under varying transaction loads.

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The CC-PM data layer, built on **Amazon RDS (PostgreSQL)** and **AWS S3**, delivers high-throughput data access, automatic replication, and redundancy across multiple availability zones. This design supports sustained system responsiveness during peak workloads such as application submissions, complaint reviews, or batch report generation.

By combining cloud elasticity with performance-optimized data management, the CC-PM platform provides WVBOM with a resilient, future-ready solution capable of expanding effortlessly as operational demands evolve.

Value to WVBOM

By leveraging the CC-PM Complaints and Disciplinary Management Module, WVBOM will gain:

- A unified platform for tracking and managing the entire complaint lifecycle.
- Automated date and task tracking that reduces administrative oversight.
- Secure and organized document, video, and audio storage linked to each case.
- Long-term data retention aligned with regulatory and agency requirements.
- Real-time visibility into complaint trends, investigator workloads, and compliance metrics.

This comprehensive functionality provides WVBOM with a scalable, transparent, and compliant system for managing disciplinary and complaint processes efficiently and effectively.

4.1.5. Payment (RFP Section 4.2.2.1.5)

The CC-PM Solution is engineered to meet WVBOM's requirement for full integration with the West Virginia State Treasurer's Office (WVSTO) EGov payment system. This allows secure acceptance of all required payment types including credit/debit cards and EFT/ACH and provides complete, auditable fee receipt tracking within each member's record.

WVSTO EGov Payment System Integration

The CC-PM platform connects directly with the WVSTO EGov system using the API specifications supplied by the Treasurer's Office. This standards-based integration delivers real-time, validated payment processing with no manual intervention.

- Establishes secure API-based communication with the WVSTO EGov system for all authorized payment types.
- Supports real-time authorization, payment status updates, and automated posting into member records.
- Fully supports credit cards, debit cards, and EFT/ACH transactions as processed through the EGov gateway.
- Encrypts all transmitted financial data using PCI-DSS-compliant protocols (TLS 1.2+).
- Enable immediate synchronization of payment confirmations, reducing reconciliation errors.

Automated Fee Capture and Receipt Management

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The CC-PM Solution makes sure that all payments and receipts are automatically captured, stored, and linked to the appropriate member record. This creates a complete financial history, supporting transparency, audits, and ongoing regulatory compliance.

- Generates digital receipts instantly after successful EGov payment processing.
- Automatically associates each receipt with the corresponding member, application, renewal, or disciplinary case.
- Allows applicants and staff to view, print, or download receipts from within their secure portal dashboards.
- Maintains a permanent, immutable audit trail for receipts, refunds, reversals, and payment adjustments.
- Uses configurable receipt templates that include WVBOM branding, transaction details, and timestamps.

Configurable Fee Logic and Automated Assessment

WVBOM administrators can configure and update fee schedules directly in CC-PM without vendor involvement or technical coding. This flexibility supports dynamic policy changes and simplifies long-term financial management.

- Applies rule-driven fee calculations based on license type, application category, or disciplinary action.
- Supports late fees, conditional fees, discounts, and administrative adjustments.
- Maintains version history for fee changes to support audit and compliance requirements.
- Enables fee accuracy through configurable validation rules and real-time workflow enforcement.

Financial Reporting and Reconciliation Tools

The CC-PM Solution includes comprehensive reporting tools to support revenue monitoring, daily reconciliation, and financial oversight. These capabilities align with the workflows of WVBOM fiscal staff and external auditing entities.

- Provides dashboards for real-time tracking of revenue by fee type, license type, and payment channel.
- Offers automated reconciliation reports comparing CC-PM financial records with EGov transaction data.
- Allows export of financial summaries in PDF, Excel, and CSV formats for accounting or audit integration.
- Supports scheduled reporting for end-of-day, weekly, monthly, and annual revenue cycles.

Security and Compliance Framework

All payment-related processes within CC-PM adhere to strict federal and state compliance standards. Security controls enable that payment data, receipts, and financial records are protected at every stage.

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- Implements PCI-DSS-compliant encryption and tokenization for financial data handling.
- Uses Role-Based Access Control (RBAC) to restrict access to financial information based on job function.
- Maintains immutable logs for all payment interactions, including successful charges, failures, and refunds.
- Aligns with NIST, HIPAA, and state cybersecurity requirements for protecting sensitive financial data.

Key Benefits to WVBOM

This integration-driven payment architecture enables secure, accurate, and efficient processing of all fees collected by WVBOM. It enhances user experience while reducing manual workload and improving financial accountability.

- Smooth, real-time integration with WVSTO EGov for all payment types.
- Automatic recording and storage of fee receipts in each member's record.
- Reduced reconciliation burden for WVBOM staff through automated workflows.
- Full compliance with state financial and audit requirements.
- Scalable design supporting future enhancements and payment channels.

4.2. Cloud Based Documentation Program (RFP Section 4.2.2.2)

The **CardyCares Provider Management Solution** includes an **integrated, secure, cloud-based Enterprise Document Management System (EDMS)** purpose-built to support the **West Virginia Board of Medicine's** licensing and credentialing processes. The solution features an intuitive interface that requires minimal steps to access managed content, improving user efficiency while maintaining strict data security and compliance.

All documents are **securely stored in the cloud**, and the program is configured to **prohibit printing, downloading, or local storage** of any files on individual machines or devices. This allows complete protection of sensitive provider data, aligning with confidentiality and regulatory standards.

The EDMS supports **tagging, packaging, and retrieval** of all provider-related documentation, including license applications, identity verification, education credentials, background checks, and supporting affidavits. Built-in **archival, retrieval, and expungement capabilities** provide a complete lifecycle management framework for both active and historical records.

Powered by **AI-based document classification** and **Natural Language Processing (NLP)**, the CC-PM solution automatically reads, categorizes, and indexes both structured and unstructured data enhancing accuracy, scalability, and speed while minimizing manual effort.

The system's flexible architecture allows **integration with existing or future document management systems**, giving the Board a secure, compliant, and future-ready platform for managing all licensing and credentialing documentation.

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4.2.1. Portal Allows A Secure Document Sharing for WVBOM Staff, Board Members, and Authorized Third Parties (RFP Section 4.2.2.2.1)

The CardyCares Provider Management Solution includes a secure, role-based document exchange portal that enables West Virginia Board of Medicine (WVBOM) staff and board members to send and receive confidential documents with authorized third parties safely and efficiently.

Each user whether WVBOM staff, board member, or an authorized external party has a secure, authenticated account with role-based access controls. These controls allow administrators to restrict access at the workspace, folder, or document level, ensuring that only designated users can view, upload, or manage specific files.

The portal supports encrypted document transmission, both in transit and at rest, complying with state and federal data protection and privacy standards. Audit logs track all user activity, providing full traceability of document access, sharing, and modifications.

Additionally, the solution's granular permission settings allow WVBOM administrators to grant temporary or limited access to external reviewers, credentialing partners, or legal representatives as needed without compromising data security or exposing unrelated records.

This secure collaboration environment streamlines the exchange of sensitive licensing and credentialing documents while maintaining the highest standards of confidentiality, accountability, and compliance.

Secure Document Exchange Portal

The CC-PM Solution includes a secure, cloud-based document exchange portal that allows WVBOM staff and authorized external parties to share confidential documents in a controlled, auditable environment. It supports encrypted file transfer, restricted access, and automated notifications for every exchange event.

- Provides **dedicated workspaces** for staff, board members, and external entities (e.g., legal counsel, medical facilities, investigators).
- Enables **secure upload, download, and sharing** of sensitive files without using email or external transfer tools.
- Tracks all activities uploads, downloads, and views with **timestamped audit logs**.
- Integrates with the CC-PM Enterprise Document Management System (EDMS) for centralized recordkeeping.

User and Role-Based Access Control

Access to the portal and its contents is managed through configurable role-based permissions that align with WVBOM's operational hierarchy and security policies. Each user's access is strictly limited to authorized folders, files, or workspaces.

- Implements **granular permission settings** to assign access at document, folder, or workspace levels.

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- Supports **user grouping** for board members, staff, and third parties to streamline access control.
- Allows **temporary access provisioning** for external reviewers or investigators, with automatic expiration options.
- Provides **activity tracking and reporting** on all user interactions for audit and compliance purposes.

Board Member and Staff Portals

Separate, secure login environments are provided for WVBOM board members and internal staff, ensuring proper segregation of duties and confidentiality across roles. The portal enhances collaboration and decision-making while maintaining strict data security.

- Board members can **review disciplinary materials, meeting packets, or case documents** within a secure interface.
- Staff can **upload, categorize, and assign files** to relevant board or committee members.
- Supports **commenting, versioning, and acknowledgment tracking** within shared documents.
- Provides **automated alerts** when new materials are available for review or signature.

Confidential File Sharing and Tracking

Every document exchanged through the portal is encrypted, logged, and version-controlled. This providess data integrity and complete visibility into who accessed or modified a document, when, and how.

- Uses **AES-256 encryption** for data at rest and **TLS 1.2+** for transmission security.
- Maintains **immutable audit logs** that capture user ID, action type, and timestamps for all activities.
- Allows **document-level sharing controls**, restricting visibility or editing rights to designated users.
- Supports **real-time tracking dashboards** for monitoring file movement, download history, and pending actions.

Integrated Notifications and Workflow Support

The system provides automated notifications and configurable workflows that help WVBOM staff manage and track document sharing efficiently. Notifications are triggered by defined events, ensuring timely communication and document acknowledgment.

- Sends **email and in-system alerts** when documents are uploaded, shared, or updated.
- Supports **document acknowledgment workflows**, allowing users to confirm receipt or review.
- Enables **reminder scheduling** for pending approvals or incomplete document exchanges.
- Integrates with CC-PM's Task Management module for coordinated follow-up activities.

Compliance and Security Framework

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Built on AWS Government Cloud infrastructure, the CC-PM Secure Exchange Portal adheres to the highest levels of compliance and data protection standards. All configurations align with WVBOM's internal policies and federal requirements for confidential data management.

- Compliant with **NIST 800-53, HIPAA, and FedRAMP** moderate security controls.
- Enforces **multi-factor authentication (MFA)** for all staff and board member logins.
- Employs **continuous monitoring and intrusion detection** via AWS CloudWatch and GuardDuty.
- Provides **data residency and redundancy** across multiple secure availability zones.

Key Benefits to WVBOM

This secure exchange capability streamlines communication between WVBOM, its board, and external entities, ensuring confidentiality, accountability, and operational efficiency.

- Centralized, secure portal for all external document exchanges.
- Full visibility into user activities and document histories.
- Reduced administrative overhead and reliance on external transfer tools.
- Strengthened compliance posture for handling sensitive information.

4.2.2. File Upload Capabilities for WVBOM Staff and Board (No Additional User License Cost) (RFP Section 4.2.2.2.2)

WVBOM staff and board members (at no additional user license cost) to upload documents and audio/video files. File types include, but are not limited to; PDF, DOC, DOCX, XLSX, PNG, JPEG, MP4, MOV. The following **Figure 33** illustrates how a document could be uploaded with associated information as metadata that would be used to index, search, and filter documents.

Figure 33: Document and media Upload

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The **CC-PM Solution** allows **West Virginia Board of Medicine (WVBOM)** staff and board members **at no additional user license cost** to **securely upload and manage documents, images, and audio/video files** within the cloud-based platform. The solution supports a wide range of file types, including **PDF, DOC, DOCX, XLSX, PNG, JPEG, MP4, and MOV**, providing flexibility in managing various licensing and credentialing materials.

Users can upload documents directly from desktops, laptops, tablets, or mobile devices to support credentialing reviews, verifications, and disciplinary proceedings. Uploaded content is automatically tagged with **metadata** such as document type, category, author, creation date, and unique identifiers, enabling fast and accurate retrieval through intelligent search and filtering.

The integrated **Document Management System (DMS)** classifies and stores files by type such as **provider-related, case-related, or board-review-related** with strong encryption and access controls that restrict visibility to authorized users.

The CC-PM Solution also supports **multimedia evidence management**, allowing staff to securely upload and store **audio or video recordings** from hearings or credentialing sessions. All files remain within the protected cloud repository and cannot be printed, downloaded, or saved locally, maintaining compliance with confidentiality and data protection requirements.

This combination of **document and case management capabilities** improves operational efficiency, collaboration, and secure information exchange for WVBOM staff and board members.

4.2.3. No-Delay File Viewing of Uploaded Documents and Media (RFP Section 4.2.2.2.3)

The **CC-PM Solution** provides a **cloud-based document viewing framework** that allows **WVBOM staff and board members** to access all uploaded documents, videos, audio files, and images **directly within the portal without system delay**. The platform uses optimized content streaming and caching technology to enable **instant viewing** of supported file types such as **PDF, DOC, DOCX, XLSX, PNG, JPEG, MP4, and MOV** without requiring local downloads or additional software.

Built on a **high-performance architecture**, the solution delivers smooth playback for audio and video files and rapid rendering for large documents, regardless of file size or network conditions. All content remains securely hosted within the **cloud environment**, with no data stored locally on user devices.

The user viewing the file within the **portal** can zoom, scroll, and playback. The solution allows users to review files efficiently during licensing, credentialing, or disciplinary review processes. This design promotes fast, secure access to all materials while maintaining compliance with **data protection and confidentiality standards**.

Key Benefits to WVBOM

By delivering immediate, secure access to multimedia content within the portal, the CC-PM platform enhances efficiency, collaboration, and compliance across all functional areas.

- Instant access to all uploaded documents and media without delays.
- Consistent, high-performance viewing experience for all users.

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- Secure and compliant streaming of sensitive multimedia content.
- Reduced dependence on external file players or software installations.

4.2.4. Application/Renewal System via Website Portal (RFP Section 4.2.2.2.4)

The **CC-PM Solution** offers an **integrated web-based portal** accessible directly through the **West Virginia Board of Medicine's website** (https://wvbom.wv.gov). The portal serves as a secure entry point for WVBOM staff, board members, and authorized external users to manage all licensing and credentialing activities.

The portal is **fully integrated with the centralized database and the cloud-based documentation program**, enabling accurate and real-time transfer of data, documents, and updates across all system components. This integration eliminates data redundancy and supports a unified workflow for application processing, document management, and credential verification.

The **user-friendly interface** allows authorized users to access provider records, upload supporting documentation, and track licensing activities in one environment. Built with modern web technologies, the portal is **responsive, secure, and ADA-compliant**, supporting access across desktops, tablets, and mobile devices.

By linking the WVBOM's public website to the **CC-PM Solution's secure portal**, the design provides a consistent user experience, efficient data flow, and reliable exchange of information between WVBOM's systems and the cloud-based infrastructure.

4.3. Application/Renewal System via Website Portal (RFP Section 4.2.2.3)

The solution's Integrated Provider Portal and Provider Management Portal allows for managing the entire Application/Renewal process for licensing and credentialing. Find below the features and functions of these portals explained:

Provider Portal:

The Provider Portal is a secure, user-friendly, and intuitive online interface that enables medical doctors, podiatric physicians, and physician assistants to manage all aspects of their licensing, credentialing, and renewal processes. It supports the full provider lifecycle, from initial application through reauthorization, while ensuring compliance with all state regulations and credentialing requirements. Through the portal, licensed providers and applicants can:

- Apply for initial licensure for their relevant credential type.
- Submit renewal applications and re-credentialing documents.
- Upload supporting documents securely, including education, training, and certification verifications.
- Update personal and professional information (e.g., address, contact details, specialty, practice location).
- Track application or license status in real time through a centralized dashboard.
- Communicate securely with WVBOM staff for clarifications, additional document requests, or compliance requirements.
- Pay licensing and renewal fees through integrated payment processing with the WV State Treasurer's "E-Gov" system.

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- The portal accommodates different credential types and pathways, including:
- Full licensure for physicians, podiatric physicians, and physician assistants.
- Temporary or provisional licenses when applicable under regulatory provisions.
- Special credential categories as defined by WVBOM policy (e.g., limited practice or telemedicine authorizations).

Each provider is assigned a unique Provider ID linked to their application and license history, enabling accurate tracking and management of services and compliance status. Providers can modify their profile at any time, add or remove practice locations, and update specialty information.

Provider Management Portal: Licensing & Credentialing (Licensing Staff / Case Manager Module)

The Provider Management Portal is a secure, configurable, and user-friendly solution designed to manage the full licensing and credentialing lifecycle for medical doctors, podiatric physicians, and physician assistants. It integrates with WVBOM's database and cloud-based documentation program to support efficient application processing, regulatory compliance, and ongoing credential management. Find below an **Figure 34** of the Licensing/Credentialing staff's dashboard showing the list of licensing applications and their status:

EXISTING APPLICATIONS

	Pending		Accepted		Rejected		Closed	
	3		0		1		0	

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PROVIDER ID	APPLICANT ID	TYPE	PROGRAM NAME	CORPORATION NAME	PHONENUMBER	TYPE	
232424	A2023002021751	Private	Megan OBrien's Care	Megan OBrien's Care	6576576576	Private	r
232424	A2023002021751	Private	Megan OBrien's Care	Megan OBrien's Care	6576576576	Private	r
234416	A2023004021731	Private	james.moore	James Moore	5675765765	Private	j
234416	A2023004021731	Private	james.moore	James Moore	5675765765	Private	j
233389	A2023003021631	Private	WHOLE SYSTEMS HEALTHCARE - HILO	WHOLE SYSTEMS HEALTHCARE - HILO	7867867868	Private	t
233389	A2023003021631	Private	WHOLE SYSTEMS HEALTHCARE - HILO	WHOLE SYSTEMS HEALTHCARE - HILO	7867867868	Private	t
233385	A2023003021621	Private	Health Care	Health care	7656756576	Private	t
233385	A2023003021621	Private	Health Care	Health care	7656756576	Private	t
233381	A2023003021611	Private	CARERESOURCE HAWAII	CARERESOURCE HAWAII	6756455645	Private	t

Figure 34 - Dashboard of the Licensing/Credentialing staff

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Application & Credential Tracking

The portal enables individualized tracking of provider licenses and certifications with configurable timelines, prompts, and automated reminders to enable timely renewals. A rules-based workflow engine routes applications through pre-built licensing and credentialing workflows. Using secure role-based access control (RBAC), designated licensing staff can review, process, approve, or deny applications. Integrated alerts and notifications via email, SMS, and in-app messages keep both staff and applicants informed of status changes or required actions. Find below **Figure 35** of the Provider and License Information that can be viewed by the WVBOM staff:

Figure 35 - Provider and License Information

Administrative Features for Licensing Staff - Licensing administrators can:

- Access and review submitted applications and supporting documentation.
- Assign applications to specific staff queues.
- Create, modify, and manage application templates for various credential types.
- Place applications on hold, request additional documentation, or archive them per policy.
- Generate compliance-ready PDF records of final application responses, including timestamps, applicant identification, and page numbering.

Search & Data Integrity

The portal features a robust provider search engine capable of exact, fuzzy, and partial matches, as well as wildcard and "sounds like" name matching. Key capabilities include:

- Unique Provider ID linked to application and license history.

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- Cross-system integration to retrieve provider data from external credential verification services (e.g., Federation of State Medical Boards).
- Duplicate record management with merge capabilities.
- Real-time synchronization with WVBOM systems for updated provider data.

Credentialing Processes

- Primary Source Verification: Integration with FSMB's Uniform Application and Federation Credentials Verification Service for automatic data imports.
- Background Checks: Built-in workflows for ordering, tracking, and documenting criminal background check results, with secure storage linked to provider IDs.
- Audit Trails: All licensing and credentialing activities are logged for compliance and legal review.

Collaboration & Communication

The portal includes secure messaging tools to facilitate real-time communication between licensing staff and providers. Providers can upload additional documentation, respond to inquiries, and receive status updates without requiring manual follow-ups.

Integration with Financial Management

The system integrates with the WV State Treasurer's "E-Gov" payment platform for fee collection. Licensing staff can track payment status and link completed payments to application processing workflows.

Benefits

By modernizing and standardizing licensing processes, the Provider Management Portal reduces administrative burdens, increases transparency, and provides compliance with HIPAA, PII security standards, and WCAG 2.1 AA accessibility requirements. The result is a streamlined experience for providers and efficient oversight capabilities for WVBOM staff.

From the WVBOM administrative side, the portal allows licensing staff to:

- Review, approve, or deny applications with full audit trails.
- Customize and modify licensing forms and requirements for different provider types.
- Access and maintain historical versions of applications and licenses for legal compliance.
- Place licenses or applications on hold, revise them, or archive them according to policy.

By providing a streamlined, accessible, and transparent licensing experience, the Provider Portal empowers healthcare professionals to manage their credentials efficiently while enabling the Board to maintain high standards of accuracy, compliance, and public safety.

4.3.1. Centralized Member Dashboard with Real-Time Status and Historical Record Access (RFP Section 4.2.2.3.1)

The solution includes a dashboard for every user role that is personalized to their tasks and actions. The centralized dashboard aggregates data and metrics from tasks and activities of all users in real-time allowing the administrators and stakeholders of the WVBOM to understand application and renewal status.

Real-Time Data Access and Insights:

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- **Dashboards:** Visual dashboards provide a real-time overview of key performance indicators, enabling staff to quickly assess progress and focus on priority areas.
- **Case Management Dashboard:** Displays application intake status, renewal status, case status, open tasks, and actionable items.
- **Workload Dashboards:** Show caseworker workload to optimize resource allocation and prioritize urgent cases.
- **Data Accessibility:** Centralized access to comprehensive data supports evidence-based decision-making, fostering operational efficiency and compliance.

Configurable Support for Compliance:

The solution's flexibility enables it to adapt to evolving reporting requirements, supporting WVBOM in maintaining compliance with state and federal regulations while enabling continuous monitoring of practice standards.

By combining customizable reports, advanced data visualization, and real-time insights, the solution empowers WVBOM to enhance transparency, improve accountability, and make data-driven decisions.

Find below screenshots **(Figure 36 & 37)** of the solution's report and data visualization capabilities:

Figure 36: Data visualization through the WVBOM Administrator Dashboard - Screen - 1

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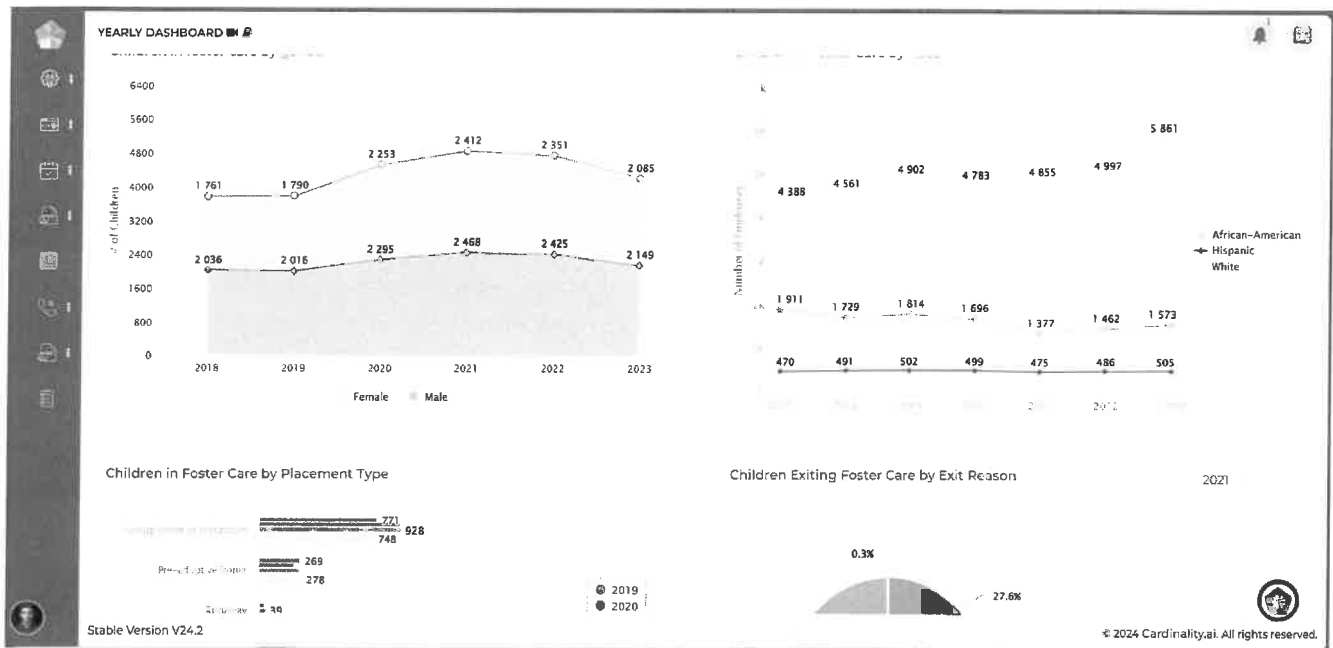
Figure 37: Data visualization through the WVBOM Administrator Dashboard - Screen - 2

4.3.2. Member Login Using Email as a Username with Secure, Customizable Password Requirements (RFP Section 4.2.2.3.2)

The solution supports secure member access to the online portal using an email address as the username and a customizable password that meets strong security requirements, including at least eight characters with one capital letter, one number, and one symbol. The solution provides self-service features such as "Forgot Password" and account recovery to handle login issues, and incorporates Multi-Factor Authentication (MFA) for added protection. Members can create and manage their accounts to securely store and access personal data, with advanced security controls safeguarding sensitive information.

4.3.3. Member Credential Management: Email and Password Updates, Secure Reset Functionality, and Unique Login Enforcement (RFP Section 4.2.2.3.3)

The CC-PM Solution allows members to securely update their username (email) and password after logging in. A time-bound reset link is provided for password recovery through a secure retrieval system, and the solution enforces unique email addresses so that no two accounts can share the same credentials.

4.3.4. Member Contact Information Management with Address Verification, Change Review Process, and Contact History Tracking (RFP Section 4.2.2.3.4)

The solution integrates address verification using Smarty, which validates and standardizes all addresses entered into the portal against authoritative databases such as USPS. This eliminates undeliverable or incorrect addresses and automatically reformats entries into a uniform USPS-approved format. In addition, the system applies consistent formatting across all contact fields, including telephone numbers and email addresses, reducing duplication and data entry errors.

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Through the portal, members can securely submit updates to their contact information (address, phone number, email). These updates are queued for review, where WVBOM staff can review, revise, and approve changes prior to activation. This controlled process maintains accuracy while supporting audit requirements.

All updates are logged and tracked in an audit trail, recording the original data, the updated information, the user who initiated the change, and the staff approval action. This provides full transparency and accountability for contact information changes across the system.

The low-code Administrator Platform empowers WVBOM staff to easily configure rules and workflows related to contact updates. For example, staff can define formatting standards for phone numbers, establish approval workflows for address changes, and adjust validation parameters without requiring technical development. This flexibility allows administrators to quickly adapt to policy changes or operational needs while maintaining secure and accurate member records.

4.3.5. Administrative Oversight for Application and Document Review by WVBOM Staff (RFP Section 4.2.2.3.5)

The solution's caseworker portal provides WVBOM staff with comprehensive administrative access and oversight to review applications and all documents submitted by members prior to making an approval or denial decision. Staff can securely view documents in prescribed file formats and, in cases of discrepancies or missing information, initiate a request for additional or replacement documents directly through the portal. This makes sure that WVBOM staff have full visibility and control over application review and decision-making.

4.3.6. Custom Application Creation and Modification with Full Archiving and Date-Specific View of Member-Facing Content (RFP Section 4.2.2.3.6)

The Low Code EmpowerPlatform Administrator Portal's Form Builder, gives WVBOM staff the ability to customize, modify, and create applications and renewal forms through an intuitive drag-and-drop interface. Business users can quickly adjust form fields, configure logic, and update application content to align with program and policy changes without technical coding. These forms are responsive by design, functioning across devices and screen sizes for both staff and member use.

The solution maintains legally sufficient archival copies of all prior iterations, allowing staff to retrieve a true and complete copy of any application as it was presented to a member on a specific date. Application content that is common across multiple member types can be auto-populated and transferred between applications, reducing duplication and promoting accuracy.

In addition, the Low Code Form Builder enables administrative or business users to modify the public-facing portal, such as updating the search webpage by adding new fields or removing existing ones. Backend configuration and screen options available to staff support greater flexibility, as demonstrated in representative screenshots **(Figure 38 & 39)** provided.

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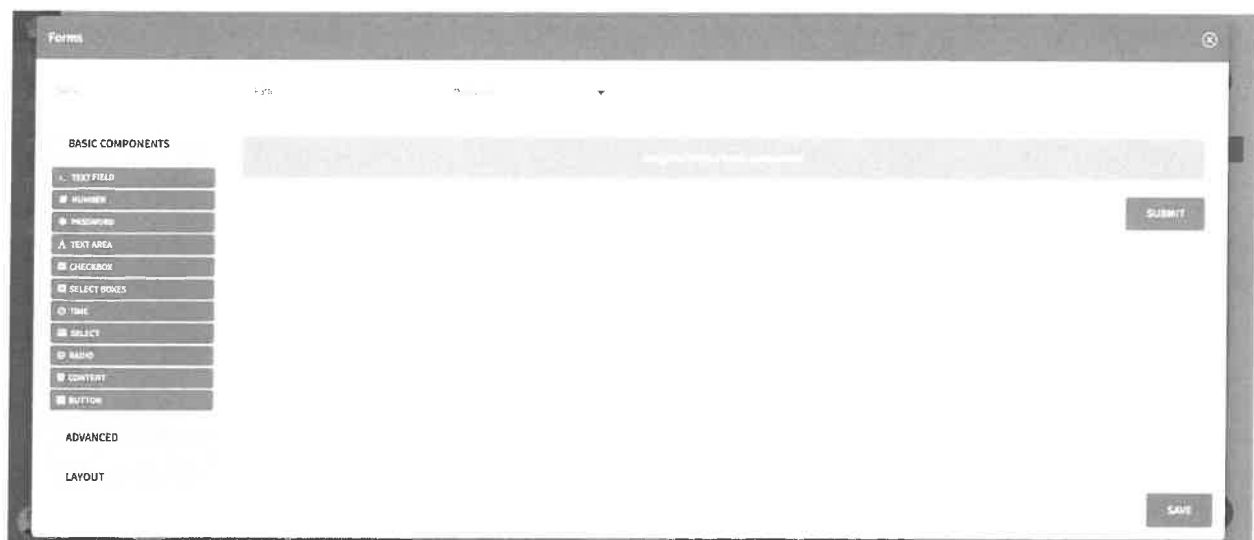
Figure 38 - List of Basic Components of the Form Builder.

Figure 39 - Advanced Components of the Low Code Form Builder

4.3.7. Customizable Staff Workspace with Print/Save Access, Application Status Controls, and Document Retention Compliance (RFP Section 4.2.2.3.7)

The solution provides WVBOM staff with a customizable administrative workspace that supports the full lifecycle management of member forms and applications. All member-related documents automatically become part of the case record and are attached to a Case ID or Member ID. The solution's document management capabilities allow staff to packet and organize all documents applications, communications, reports, and supporting documentation into a structured record tied to the corresponding Case ID or Member ID.

These packeted records enable staff to quickly access, review, and manage all relevant materials in one place, improving accuracy and reducing administrative overhead. Staff can save, print, revise, hold, or archive applications based on their status, with version histories maintained for audit and

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accountability. Documents can also be arranged in chronological sequence and managed according to WVBOM's document retention policy, including scheduled deletion when applicable.

The EmpowerPlatform further provides WVBOM staff with a flexible workspace that can be tailored to the specific tasks at hand. Whether reviewing applications, handling correspondence, or managing archived records, staff have the tools to efficiently navigate and administer packeted documents associated with each member or case throughout their lifecycle.

4.3.8. Save-and-Resume Application Functionality with FSMB UA and FCVS Data Integration (RFP Section 4.2.2.3.8)

The solution's member portal provides the ability for applicants to save an application or renewal process in progress and return later to complete it, without losing previously entered information. This supports members who may need additional time or documentation before submission while maintaining the integrity of partially completed applications.

In addition, the solution is designed to interface with the Federation of State Medical Boards (FSMB) Uniform Application (UA) and the Federation Credential Verification Service (FCVS) packet. Through this integration, applicable members can electronically transfer their verified data and credential information directly from FSMB systems into the WVBOM application. This reduces manual entry, minimizes errors, and accelerates the submission and review process for medical doctors and other licensed professionals.

By combining save-and-resume functionality with interoperability with FSMB UA and FCVS, the solution supports a more efficient, accurate, and member-friendly application process while also streamlining administrative review for WVBOM staff.

4.3.9. Generation of Legally Sufficient Member Application Records with PDF Archival and Portal Access (RFP Section 4.2.2.3.9)

The website portal must generate a legally sufficient and accurate record of a member's final responses to all application questions. At a minimum for a legally sufficient and accurate record, include:

4.2.2.3.9.1 Mirror all written content and application instructions as viewable by members.
4.2.2.3.9.2 Accurately reflect the information entered and saved by members in response to each question.
4.2.2.3.9.3 Be automatically saved in .PDF format within each member's database record resources.
4.2.2.3.9.4 Contain Member identity and page number information on each page of the PDF.
4.2.2.3.9.5 Include the date of electronic submission by member.
4.2.2.3.9.6 Utilize readable font no smaller than visual size of 11-point Times New Roman font.
4.2.2.3.9.7 Be accessible to the member through the member's portal.

The solution includes capabilities to generate a legally sufficient and accurate record of each member's final responses to application questions. The solution incorporates integrated content management capabilities with Microsoft Word-compatible formatting tools to support consistent, compliant document creation and storage.

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All written content and application instructions are mirrored in the final record exactly as members view them during the application process. The system captures and reflects every response entered and saved by the member, creating a complete and accurate representation of the application. Once submitted, the record is automatically generated as a PDF and stored within the member's database record. Each PDF includes the member's identity and page numbers on every page, along with the electronic submission date for a verifiable record of the transaction.

Standardized document formatting is applied to maintain readability, with fonts no smaller than 11-point Times New Roman. Members have direct access to their finalized PDF through the secure portal, giving them visibility into their complete application history.

Through these capabilities, Cardinality provides reliable document generation, formatting, and access that meet legal sufficiency and program requirements.

4.4. Data and Compliance (RFP Section 4.2.2.4)

4.4.1. HIPAA and PII Compliance with Secure Handling of Confidential Information and Communications (RFP Section 4.2.2.4.1)

Cardinality fully understands the WVBOM's expectation for the protection of highly sensitive data, including **Protected Health Information (PHI)** and **Personally Identifiable Information (PII)**. Our solution architecture and implementation practices are designed to support **HIPAA compliance** and secure management of confidential information throughout the entire data lifecycle from collection and storage to access and transfer.

Core of the Architecture
Data Privacy, Protection & Security

Security and privacy checks embedded in all product features

APIs and data functions to be secured with tokenized access

Encrypt all data; store personal data with specialized access controls

Secure sensitive data with granular RBAC/ABAC; compliant with HIPAA, PII and other privacy laws

Anonymize and tokenize sensitive and personal information

Role-based access to data and information through Dashboards

Figure 40: Cardinality's Core Architecture for Data Privacy, Protection & Security

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Our CardyCares Provider Management (CC-PM) solution is deployed in AWS GovCloud (US), a FedRAMP High-authorized environment. This hosting model enables compliance with federal and state data security requirements, including HIPAA, NIST SP 800-53, FISMA, and CJIS standards. All data is encrypted in transit (TLS 1.2+) and at rest (AES-256), with access governed through strict Role-Based Access Control (RBAC) and Multi-Factor Authentication (MFA).

Cardinality's platform also includes:

- **Full audit logging** of all system events, including access to PHI/PII, user activity, and system configuration changes
- **Session timeout controls** and **IP whitelisting**
- **Administrative tools** for WVBOM to manage user permissions and audit access
- Secure **data exchange protocols** for all integrations with third-party systems or state interfaces

We follow a **secure software development lifecycle (SSDLC)** that incorporates:

- Static and dynamic code analysis
- Internal and **third-party penetration testing**
- Continuous vulnerability scanning and patch management
- Developer and support staff training in data protection and compliance

Cardinality maintains internal policies for **incident response, data breach notification, access control**, and **security awareness training** that align with HIPAA and state-specific privacy regulations. We regularly test and update these policies to address emerging risks and compliance mandates.

Upon request, Cardinality will provide **independent third-party documentation** verifying our compliance with HIPAA and applicable privacy regulations. This includes system-level certifications and audit reports that demonstrate our commitment to safeguarding sensitive data.

By combining industry-standard security protocols, continuous monitoring, and proven compliance controls, Cardinality makes sure that all WVBOM data is protected with the highest degree of confidentiality, integrity, and availability.

4.4.2. Accessibility Standards Compliance Including WCAG 2.1 Level AA and Third-Party Verification (RFP Section 4.2.2.4.2)

Cardinality fully recognizes the importance of accessibility for all users, including individuals with disabilities, in accordance with the Web Content Accessibility Guidelines (WCAG) 2.1 Level AA and other applicable standards referenced by WVBOM. The CardyCares Provider Management (CC-PM) solution is built with universal design principles in mind, supporting inclusive access and usability for all stakeholders.

Key elements of our approach include:

- **Accessibility-by-Design**: From the earliest phases of user interface design, our solution follows accessibility best practices, including semantic HTML structures, logical heading

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hierarchies, meaningful link descriptions, ARIA landmarks, and clear keyboard navigability to optimize the experience for users of assistive technologies.

- **Inclusive Visual and Interaction Design**: We prioritize high-contrast visual elements, scalable typography, consistent focus indicators, and alternate text for images and icons to maximize usability for individuals with low vision or cognitive challenges.
- **Assistive Technology Compatibility**: The system undergoes testing with industry-standard screen readers, voice recognition software, and other assistive technologies to validate compatibility and support a broad range of accessibility needs.
- **Automated and Manual Testing**: During development and QA, our teams conduct automated accessibility scans, followed by manual testing performed by accessibility-trained testers. This includes evaluation of all workflows, forms, and user journeys.
- **Third-Party Validation**: Cardinality will engage a qualified third-party accessibility firm to perform independent accessibility assessments and certify compliance with WCAG 2.1 Level AA. We will provide this documentation to WVBOM as required to verify conformance.
- **Continuous Accessibility Maintenance**: Beyond initial delivery, Cardinality is committed to proactively monitoring and maintaining the accessibility of the CC-PM platform throughout its lifecycle, adapting to updates in accessibility standards or requirements.

We design modern and configurable user experiences that adhere to the ADA Section 508 Electronic and Information Technology Accessibility Standards, ensuring inclusivity for all users. The interface adapts easily to desktop and mobile devices, allowing accessibility, minimal training time, and an efficient user experience.

Usability testing will be done using the following approach (illustrated in **Figure 41**):

- A third-party tool will be utilized to provide automated compliance results and actionable steps that developers can take to fix any non-compliance.
- JAWS/NVDA will be used to test accessibility for the baseline browser and other browser versions within testing preview.
- The W3C Web Content Accessibility standards will be validated using the JAWS software.
- Usability testing starts with the Unit/Development and Integration phase and covers a comprehensive set of pages

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Figure 41: Accessibility Testing Conformance Validation on User Interface

This structured approach makes the solution not only compliant on launch, but remains accessible and equitable for all users including applicants, licensees, board staff, and members of the public throughout its operational life. We view accessibility as an ongoing, shared commitment, aligned with WVBOM's mission to serve and protect the public effectively.

4.4.3. Compliance with PCI-DSS Security Requirements (RFP Section 4.2.2.4.3)

The CC-PM Solution is designed and operated in full compliance with all current Payment Card Industry Data Security Standards (PCI-DSS) and any future updates published by the PCI Security Standards Council. Our payment processing architecture enables all credit/debit card transactions to be handled securely, with strict controls to prevent unauthorized access, data breaches, and misuse of sensitive financial information.

PCI-DSS-Compliant Architecture

The CC-PM platform follows industry best practices to make sure that all payment workflows involving cardholder data meet required PCI-DSS controls. This protects applicants, licensees, and WVBOM from risks associated with payment processing.

- Uses PCI-DSS Level 1–certified payment processors for transmitting cardholder data.
- CC-PM never stores, processes, or transmits raw credit/debit card numbers within the application.
- Utilizes tokenization to replace sensitive card data with secure, non-exploitable tokens.
- Implements TLS 1.2+ encryption for all communication between CC-PM and payment systems.

Access Control and Authentication Standards

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Strict access governance allows only authorized financial staff to view payment-related information. Role-based access control frameworks align with PCI-DSS requirement groups 7 and 8.

- Enforces Role-Based Access Control (RBAC) for financial operations.
- Applies least-privilege access principles for all users handling payment records.
- Requires MFA for administrative access to any financial or audit-related data.
- Logs all payment-related access attempts, updates, and queries in immutable audit trails.

Network & Infrastructure Security Controls

Cardinality's AWS-hosted environment meets PCI-DSS infrastructure requirements, ensuring hardened security at every layer. This supports secure handling of payment workflows in alignment with national and state cybersecurity standards.

- Deploys firewalls, intrusion detection/prevention systems, and continuous monitoring tools.
- Segregates payment traffic using secure network segmentation patterns.
- Conducts regular vulnerability scans and penetration tests in accordance with PCI-DSS guidelines.
- Applies automated patching and configuration enforcement across cloud infrastructure.

Ongoing Compliance and Monitoring

The CC-PM Solution maintains continuous alignment with evolving PCI-DSS requirements. Compliance activities are embedded into our operational processes and reviewed regularly.

- Conducts annual PCI-DSS assessments and attestation reviews.
- Performs quarterly ASV (Approved Scanning Vendor) scans to validate external security posture.
- Monitors PCI-DSS updates from the PCI Security Standards Council to enable timely adoption.
- Provides documentation to WVBOM upon request for audits or certification reviews.

Key Benefits to WVBOM

This compliance-focused design makes sure that WVBOM's payment environment is secure, reliable, and audit-ready. It reduces payment risks while delivering a safe experience for all applicants and credential holders.

- Mitigates financial and reputational risk from card-related security incidents.
- Provides full compliance with state and federal payment-related regulations.
- Reduces liability by relying on certified payment processors and secure tokenization.
- Strengthens user trust through demonstrably secure payment workflows.

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4.5. Ongoing Maintenance and Support (RFP Section 4.2.2.5)

Cardinality has extensive experience providing continuous development and ongoing Operations and Maintenance (O&M) support across multiple government contracts, ensuring stability, performance, and long-term solution sustainability. We understand the critical nature of the defined hours of operation and will continue to operate within the existing hours of operation as defined in the solicitation. WVBOM will provide coverage for Level 1, and Cardinality will handle Level 2 & Level 3 support with coverage during those hours through staggered shifts and provide on-call support on weekends and holidays.

Level 1 Support: As confirmed in the Q&A Response, WVBOM's existing Help Desk team provides Level 1 support to end users. Cardinality will assist them with various system-related technical issues, including but not limited to outages or programming errors. Our proposed solution includes various user assistance features like:

- Self-serve resolutions related to login, password resets, etc. using Forgot Password and MFA features.
- Chatbot Assistant and Knowledge Management System (KMS) with access to FAQs and How-to training videos.
- In-built contact support feature for Easy ticket creation, communication, regular updates, and tracking to resolution.
- The Role Based Access Control component of the Cardinality solution will be accessible for the WVBOM Level 1 Help Desk team to manage user roles, accounts, and permissions. Cardinality will provide comprehensive training, detailed product documentation, and How-to training videos in KMS to empower the system administrators.

These features will make it easy for all users to self-serve and resolve the most common issues in accessing the system.

The WVBOM Level 1 help desk team will be able to report issues to Cardinality's Level 2 helpdesk team via multiple channels:

- Chatbot Assistant
- CARDY Ticketing Tool (ITSM Tool for Ticket Management)
- In-built contact support feature for ticket creation
- Support Email ID
- Contact the product support engineer by phone.

Additionally, in Level 1, unresolved issues in other digital channels that have exceeded the turn-around-time of one business day will be provided with on-call or hotline support, where Cardinality's tech support team engages with the user via a phone call. However, this is not a help desk for External Users to use as a channel for raising a ticket.

Level 2 Support: Cardinality's Level 2 engineers will support more complex issues related to applications, cases, workflows, and user configuration issues. We will work with users and leverage system administration and troubleshooting tools to resolve incidents. These responsibilities will include handling application issues, user issues, workflow issues, and more. Our Level 2 engineers will use application logs, DB Queries, and application configurations to resolve issues. Level 2 will maintain

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metrics on ticket trends and identify areas of value to target. This process will include expanding the knowledge base with known issues and resolutions and communicating them to Level 3 when critical incident categories need to be prioritized. Typically, Level 2 issues are resolved through configuration changes or database fixes.

Level 3 Support: Level 3 support is provided by Cardinality's experienced developers with in-depth functional and technical knowledge of the system. This will be for both operational and advanced issue resolution. Our engineers will have technical and engineering proficiency, complemented by business and process aptitude, to manage the application, review Level 3 incidents, and develop a resolution strategy based on the root cause, ticket severity, and impact level. If any data updates are associated with the resolution, Level 3 will coordinate this in conjunction with a configuration or software solution. Level 3 will serve an advisory role to Level 2 support for troubleshooting, system training, SOP creation and improvement, Knowledge Base enhancement, and resolving user tickets when needed. These efforts will further empower Level 1 and 2 support and allow Level 3 to concentrate on uniquely challenging technical issues. Level 3 personnel will take ownership of tickets that cannot be resolved by Level 2 personnel.
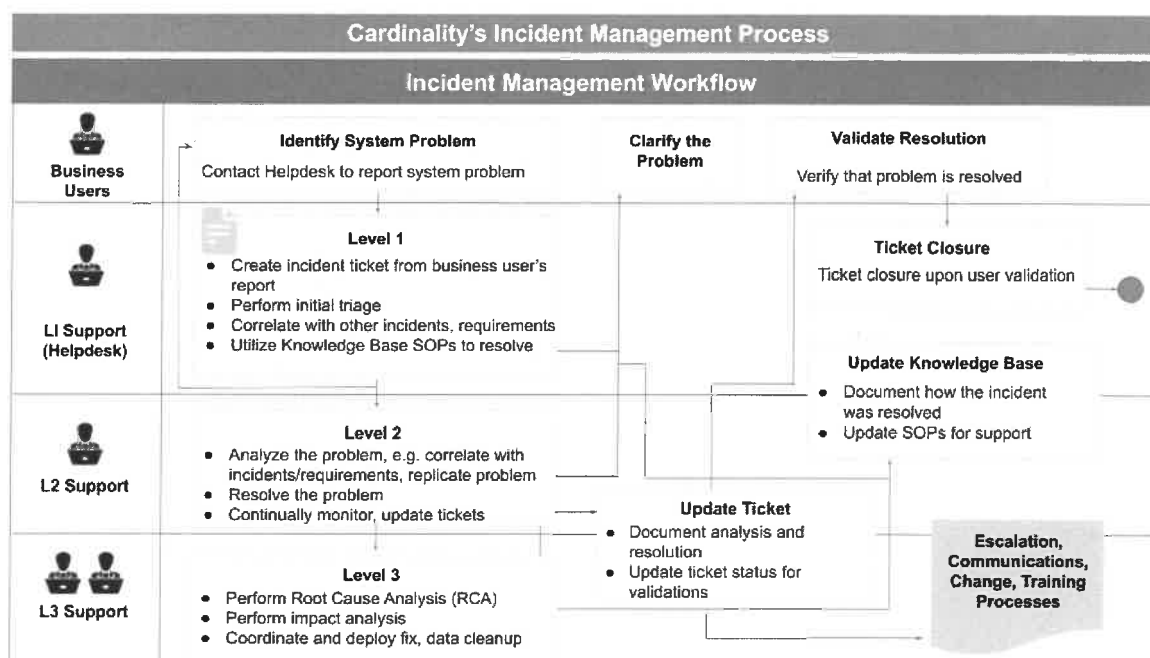
Figure 42: Cardinality's Incident Management Process

To support WVBOM's team, we plan to engage early in the project and utilize UAT for beginning the joint incident management process. We understand that there will be continued operational responsibilities with WinSTAR and seek to be a supportive partner in training in Jira and documenting procedures. Our goal is to support users during the implementation and with the transition to Maintenance & Operations and resolve reported problems as quickly as possible.

CC-PM Solution: SLA Framework

Cardinality is committed to delivering reliable, responsive, and transparent support for the proposed CardyCares Provider Management (CC-PM) solution, including all modules supporting licensure,

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inspections, complaints, investigations, and the public-facing website. Our standard Service Level Agreement (SLA) defines structured response and resolution timelines based on incident severity to help WVBOM maintain continuity of operations.

Table 1 below outlines our multi-tiered severity levels, associated definitions, and Cardinality's standard response and resolution targets. This framework helps sustain system performance, user satisfaction, and operational effectiveness across all functional areas.

Severity	Definition
Level 1	Complete loss of Platform functionality, making it unusable for all users.
Level 2	The platform's functionality is materially impaired, affecting approximately 10% of users' ability to use it for its intended purpose.
Level 3	Other problems or issues, general inquiries, or incidents that do not fall under Level 1 or Level 2 Events.
Level 4	Minor incidents, such as cosmetic issues, documentation errors, or anything deemed minor by the Department.

Table 1: Severity Levels and Definitions

The following **Table 2,** describes an indicative list of SLAs (Response time & Resolution time) that will be tracked and reported by Cardinality.

SLA#	Service Description	Measure	Measurement Window	Target Service Level	Reporting Window
SLA 1	System availability	99.5%	24x7	99.5%	Monthly
SLA 2	Incident Response Time - Level 1 Event	Within 4 hours	24x7	95%	Monthly
SLA 3	Incident Response Time - Level 2 Event	Within 24 Hours	24x7	95%	Monthly
SLA 4	Incident Response Time - Level 3 & 4 Events	5 Business Days	8 AM to 5 PM EST/EDT, M-F	90%	Monthly
SLA 6	Incident Resolution Time - Level 1 Event	Within 4 Hours	24x7	90%	Monthly
SLA 7	Incident Resolution Time - Level 2 Event	Within 24 Hours	24x7	90%	Monthly
SLA 8	Incident Resolution Time - Level 3 & 4 Events	5 Business days	8 AM to 5 PM EST/EDT, M-F	90%	Monthly

Table 2: Indicative SLA's

Ongoing Communication and Coordination Plan

Cardinality understands that consistent, transparent communication is essential for the success of the WVBOM Medical Licensure / Records Database Maintenance System modernization. Our

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Communication Plan is designed to promote stakeholder engagement, support informed decision-making, and keep the project on track throughout design, development, and implementation (DDI).

Key Components of Our Communication Plan:

Governance and Roles

- Our dedicated Cardinality **Project Manager (Stacy Night)** will serve as the primary point of contact for WVBOM.
- Cardinality's core team, including technical leads, business analysts, and integration specialists, will participate in regular check-ins.
- WVBOM will designate key stakeholders for requirements validation, UAT coordination, and final sign-offs.

Meeting Cadence

- **Weekly Status Meetings:** We provide updates on deliverables, risks, issues, and upcoming milestones.
- **Monthly Steering Committee Meetings:** Cardinality regularly collaborates with WVBOM executives and project stakeholders to review progress, approve any scope adjustments, and align on key project decisions.
- **Ad Hoc Working Sessions:** We will schedule topic-specific working sessions to address configuration of licensure and renewal workflows, data migration from the legacy system, secure document management, portal functionality, and integrations with systems such as the Federation of State Medical Boards (FSMB), payment gateways, and other third-party services, as well as testing and validation activities

Reporting and Transparency

- Cardinality will maintain a dynamic project dashboard within our secure collaboration platform, providing WVBOM with real-time access to project schedules, milestone progress, risk and issue logs, and any submitted change requests.
- Meeting agendas and action items will be distributed in advance and documented minutes shared within 24 hours.
- Risk and issue logs will be reviewed in each status meeting.

Change Order Control and Stakeholder Engagement

Cardinality places strong emphasis on structured communication and coordination whenever changes are introduced across the system. Our disciplined Change Management Strategy delivers transparency, promotes collaboration, and minimizes operational disruptions aligning with WVBOM's expectations for secure and well-governed system operations.

Our standard procedures include:

Change Impact Assessment: All proposed system or configuration changes are reviewed by a designated Change Control Board (CCB) to evaluate business impact, urgency, and risk. This board

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may include key Cardinality stakeholders and WVBOM representatives for joint decision-making when needed.

Advance Notification: We send written communication ahead of any planned changes to all affected parties. These include WVBOM Operations staff, IT support teams, Help Desk personnel, and system administrators, ensuring that everyone is aware of timelines, impact scope, and responsibilities.

Scheduled Implementation Windows: To minimize disruption, changes are implemented during pre-approved deployment windows. Cardinality provides standby support during and immediately after implementation to establish stability.

Documentation and Training: Updated system functionality is clearly documented and reflected in user guides, knowledge bases, and release notes. Where applicable, Cardinality offers focused training sessions for affected user groups.

Stakeholder Communication Channels: All stakeholders are kept informed through real-time project dashboards, status meetings, and formal change communications. Communication is tailored to each audience from executive briefings for WVBOM leadership to detailed configuration and UAT updates for system users and testers.

In addition, Cardinality will facilitate focused workshops with licensing staff, inspectors, and administrators throughout the project. These sessions are designed to gather feedback, clarify evolving configuration needs, and walk through user scenarios to validate solution readiness.

This structured and inclusive approach supports operational continuity, promotes end-user readiness, and maintains system integrity across environments (test, staging, and production).

Technical Support Commitment

Cardinality provides structured support coverage for the CardyCares Provider Management (CC-PM) solution based on defined service levels and criticality of issues. Our standard support hours and escalation procedures are as follows:

- **Standard Business Hours Support**

  - **Days:** Monday through Friday
  - **Hours:** 8:00 AM to 6:00 PM Eastern time (EST)
  - During this time, Tier 2 and Tier 3 technical support are available to address routine system issues, user inquiries, and configuration assistance.

- **After-Hours and Weekend Support for Critical Issues**

  - **Days:** Monday through Sunday (including holidays)
  - **Hours:** 24/7 on-call support for critical production issues (Severity Level 1)
  - Issues that cause full system outages, data corruption, or halt core operations are escalated via automated alerts and routed to on-call personnel for immediate triage and resolution.

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- **Support Channels Available Across All Times**

  - CARDY Ticketing Tool (ITSM platform for logging and tracking support requests)
  - Support Email Address (monitored continuously for critical incidents)
  - Phone-based escalation to the on-call engineer (available for Severity 1 incidents)
  - In-application "Contact Support" feature for direct communication with the support team
  - Knowledge Management System (self-service access to training materials, guides, FAQs)

Cardinality's support coverage and escalation process will be tailored in collaboration with WVBOM to align with agency workflows and priorities. Additional coverage options including Level 1 support, extended hours, or hotline services can be made available as part of contract negotiations.

Escalation Management:

Cardinality has established a governance framework to support a lasting partnership with WVBOM. This framework includes customizable processes to meet WVBOM's specific requirements, as well as clear communication channels, defined roles and responsibilities, and a shared understanding of accountability to minimize risks and prevent problems.

Our governance structure is characterized by a three-level mechanism with periodic project reviews to maintain a high level of transparency and responsiveness with stakeholders. The goal of our governance model is to drive visibility and decision-making with regular updates on progress, escalation of key decisions and risks, etc. Below is a description of the three levels, with key tasks specific to the implementation.

Operational Level: This is the day-to-day project operations, which are typically meetings on a daily basis and directly engaged in detailed work, e.g., configuring license types, mapping legacy system data, testing workflows, etc., covering the following topics:

- Status of completed tasks.
- Tasks planned for the day.
- Identification and resolution of impediments.

Project Level: This level of escalation includes the Project Managers and Technical Leads from both WVBOM and Cardinality. The main objective of this level is to monitor the status of the program through progress, issues, and risks and identify areas for improvement. The agenda for this level includes:

- Review of the plan versus actual progress.
- Addressing issues escalated to this level.
- Review of identified risks for the program, along with their mitigation and contingency plans.

Strategic Level: This level is composed of senior management from both WVBOM and Cardinality. The agenda for this level includes:

- Reviewing progress to enable WVBOM's business goals to be met and recommending improvement actions as needed.

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- Resolution of strategic/escalated issues escalated to this level.
- Reviewing program risks, along with mitigation and contingency actions.

Figure 43 depicts our Escalation process:
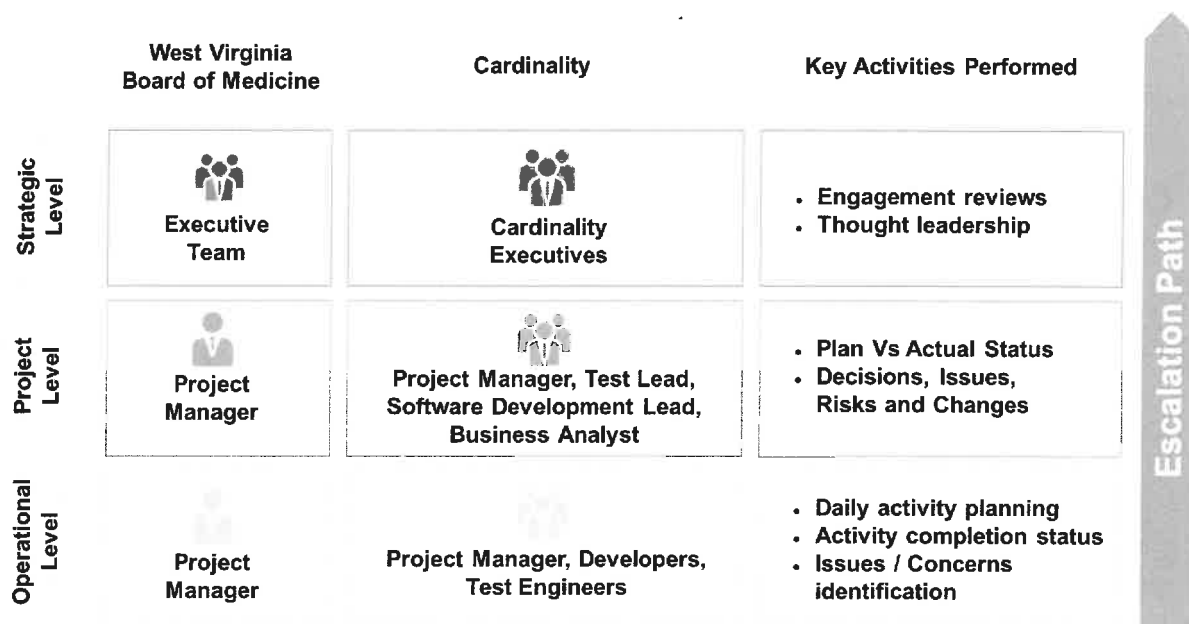
Figure 43: Escalation Process

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5. Qualifications and Experience (RFP Section 4.3)

5.1. Qualification and Experience Information (RFP Section 4.3.1)

5.1.1. Staffing Plan for Implementation and Ongoing Support with Role Allocation and Cost Efficiency (RFP Section 4.3.1.1)

The Vendor should propose a staffing plan that identifies staff that can meet the unique needs of the WVBOM while assuring that services are provided in the most economical manner. In their proposal, the Vendor should describe how the staffing plan will provide the skills necessary to meet the requirements of the project throughout the life of the contract. This includes indicating how many agents would be involved in the creation and implementation phase, as well as for ongoing support and maintenance.

Our delivery model is structured around a core Project Team that brings together leadership oversight, project management, technical configuration, data migration, testing, and user training. Each team member has defined responsibilities spanning all aspects of the implementation licensure and renewal workflows, FSMB integration, public website modernization, configurable forms, secure role-based access, and document management.

The team structure supports both remote and hybrid engagement, enabling continuous coordination with WVBOM staff throughout the project lifecycle. It is designed to be cost-effective, flexible, and to provide ongoing support for the duration of the contract. We follow Agile delivery practices to facilitate iterative development, rapid feedback cycles, and timely delivery of prioritized functionality.

Figure 44, presents our proposed Key Personnel organization chart for visual reference.

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WEST VIRGINIA – PROPOSED PROJECT TEAM ORGANIZATION CHART

Figure 44: Proposed Project Team

Staffing Plan for Implementation and Ongoing Support

Our RACI Matrix (RACI)

To support transparent governance and clear accountability across all phases of the project, Cardinality has developed a detailed RACI matrix. This matrix outlines the roles and responsibilities of key personnel throughout implementation, training, and long-term support.

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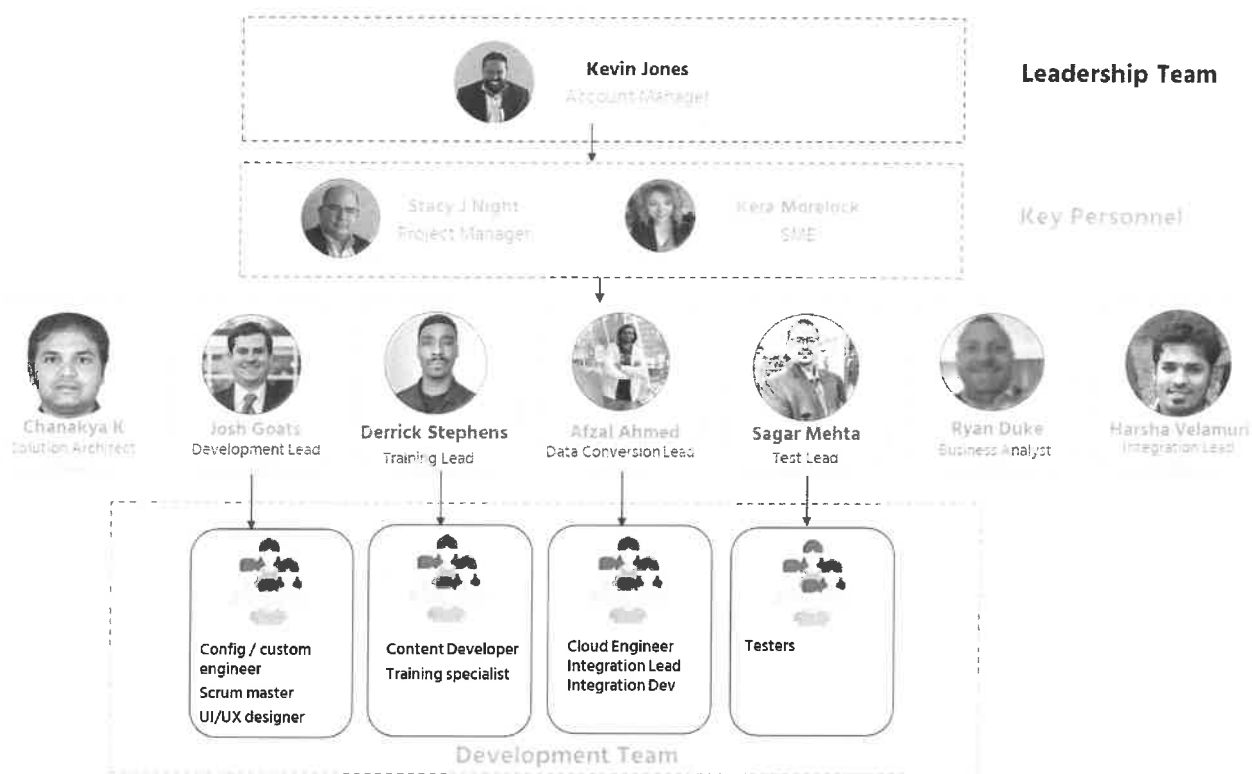| Responsibility	Project Planning & Kickoff	Requirements Gathering & Analysis	System Configuration & Development	Data Migration & Validation	Testing & QA	Training & Knowledge Transfer	Go-Live & Post Go-Live Support	
Account Manager Kevin Jones	A	C	I	I	I	I	A	A
Project Manager Stacy Night	R	A/R	C	C	C	C	R	R
SME Kera Morelock	C	A/R	C	C	C/R	C	C/R	C
Solution Architect Chanakya	C	R	A/R	C	I	I	C	I
Dev Lead Josh Coats	I	I	R	I	I	I	R	I
Test Lead Sagar Mehta	I	I	I	I	A/R	I	C	I
Business Analyst Ryan Duke	I	R	C	C	C	I	I	I
Data Conversion Lead Afzal Ahmed	I	C	C	A/R	C	I	C	I
Integration Lead Harsha Velamuri	I	R	R	C	C	I	R	I
Training Lead Derrick Stephen	I	I	I	I	I	A/R	R	I

Table 3: RACI Matrix

R = Responsible; A = Accountable; C = Consulted; I = Informed

Core Implementation Team and Resource Plan

Building on the governance structure outlined above, here we detail how each role translates into phased implementation and operational support. We outline the allocation of resources across the Design, Development, Testing, Training, and Post-Go-Live phases. The plan is designed to maintain continuity, responsiveness, and alignment with WVBOM's expectations throughout the project lifecycle.

Kevin Jones, Account Manager, will lead the executive oversight function:

- Provide strategic direction to keep the project aligned with WVBOM's broader modernization goals.
- Serve as the escalation point for any high-level risks or issues that cannot be resolved at the Project Team level.
- Engage consistently with WVBOM leadership to build trust, resolve issues quickly, and promote stakeholder participation.

Project Management and Coordination

Stacy J Night, Project Manager, will oversee daily project operations:

- Develop and maintain the project plan, timelines, and milestone tracking.
- Facilitate coordination across all Cardinality workstreams and WVBOM's internal teams.
- Chair regular project meetings with WVBOM stakeholders to review progress, address issues, and reprioritize tasks.

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- Monitor project risks, manage mitigation strategies, and keep the project on schedule and within scope.

Kera Morelock, Subject Matter Expert, will provide domain-aligned guidance throughout the project:

- Contribute business and regulatory expertise during requirements sessions to establish workflows, licensing processes, and rules are accurately captured.
- Validate system configuration, functional behavior, and end-to-end use cases to confirm alignment with WVBOM's operational needs.
- Support testing, training, and go-live readiness activities by reviewing scenarios, confirming process accuracy, and advising project teams on domain nuances.

Solution Architecture and Technical Leadership

Chanakya Katukojwala, Solution Architect, will lead the solution's overall design:

- Develop and validate the technical architecture for the CardyCares Provider Management (CC-PM) solution.
- Translate business requirements into system specifications.
- Guide development to maintain consistency, security, and scalability.
- Oversee technical integrations with Federation of State Medical Boards (FSMB), the WV State Treasurer's "E-Gov" electronic revenue system, and other credentialing or verification systems as required

Josh Coats, Software Development Lead, will:

- Manage daily technical development activities, including system configuration and customization.
- Lead agile sprints for each functional area, resulting in high-quality, tested deliverables.
- Coordinate integration development and support data exchange between the CC-PM solution and external agencies.

Requirements Gathering and Quality Assurance

Ryan Duke, Business Analyst, will align business needs with system functionality:

- Conduct workshops with licensing, inspection, and disciplinary teams to define requirements.
- Aligns solution features with WVBOM policies and compliance rules
- Document workflows and process maps used in solution configuration.
- Support UAT by validating that the system meets documented requirements.

Sagar Mehta, Test Lead, will manage testing activities:

- Develop test plans for unit, system, integration, and UAT phases.
- Coordinate with WVBOM staff to define test scenarios and scripts.
- Track and resolve defects and deliver test metrics and readiness sign-off reports.

Data Conversion, Reporting, and Integration

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Afzal Ahmed, Data Conversion Lead, will:

- Lead data profiling, cleansing, mapping, and reconciliation efforts.
- Manage the full ETL process from legacy systems to the CC-PM solution.
- Validate data accuracy with WVBOM SMEs and generate reconciliation reports.
- Develop operational and regulatory reports per WVBOM needs.

Harshavaradhan Velamuri, Integration Lead, will:

- Design and implement integrations with systems such as Federation of State Medical Boards (FSMB), the WV State Treasurer's "E-Gov" electronic revenue system.
- Map data elements and oversee API development and batch data exchange processes.
- Coordinate integration testing and resolution of technical issues.
- Lead post-go-live support for any integration-related issues.

Training and Knowledge Transfer

Derrick Stephens, Training Lead, will support system adoption:

- Conduct training needs assessments for internal and external users.
- Develop training guides, quick-reference materials, and eLearning modules.
- Deliver instructor-led and remote training.
- Oversee knowledge transfer to WVBOM staff for long-term sustainability.

Ongoing Support Resource Plan

Cardinality's post-implementation support model provides WVBOM with a sustainable and responsive structure for ongoing system maintenance, user assistance, performance monitoring, and regulatory compliance. The team remains engaged beyond go-live, offering a blend of dedicated and shared resources aligned with WVBOM's operational needs and budgetary expectations.

Support Management and Coordination

A dedicated Support Manager will serve as the primary liaison to WVBOM for all post-go-live service activities. This individual will coordinate support response efforts, prioritize incoming requests, monitor service level agreements, and schedule periodic reviews with WVBOM stakeholders. This role will also act as the escalation point for unresolved or recurring issues.

Tiered Support Team (L1–L3)

Our tiered support structure includes:

Level 1 (L1): Application Support Analysts who address routine system questions, user access requests, and basic troubleshooting. As confirmed during the Q&A, WVBOM will manage all L1 support internally.

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Level 2 (L2): Technical Support Engineers with direct access to source code and system configuration. They will handle complex issue resolution, report generation problems, form changes, and integration-related concerns.

Level 3 (L3): Development Engineers and Product Specialists who will address deep system issues such as code-level bugs, patch deployments, and architectural modifications. This team will be engaged on-demand, based on issue severity and complexity.

This structured allocation of responsibilities, supported by our RACI framework, promotes proactive coordination, minimizes duplication of effort, and enables rapid issue resolution. By aligning skilled resources with specific project phases and responsibilities, we deliver operational clarity while maintaining cost efficiency throughout the life of the contract.

Resume

Our proposed staff bring relevant experience and proven capability. Their resumes are included below.

Kevin Jones – Account Executive (Executive Sponsor)

Professional Summary
Kevin brings over 20 years of consulting experience, leading successful enterprise programs for State, Higher Education, and Government agencies. His expertise lies in managing the development and implementation of Title IV-D Child Support Systems and Child Welfare systems. Notably, as Deputy CIO of Indiana's Family and Social Services Division and CIO of Indiana's Department of Child Services, Kevin achieved a significant $100 million reduction in capital investment and a 50% decrease in total operational costs through architectural innovation for CCWIS. In his role with Team Cardinality, Kevin will provide day-to-day executive leadership, collaborating closely with the project manager and delivery team to oversee implementation and address issues. Kevin provides executive-level advocacy, strategic direction, and stakeholder alignment, supporting contract governance, executive escalation, and long-term program sustainability. His leadership helps position Cardinality not only to deliver the current modernization successfully, but also to support the state agency's broader digital transformation objectives over time.

Education and Certification
- Master's Degree in System Engineering, The Johns Hopkins University, MD   - Bachelor's Degree from the School of Engineering and Technology, Purdue University, IN   - Associate's Degree from the School of Engineering and Technology, Purdue University, IN

Core Competencies	
- Executive Sponsorship - Project Direction - Technology Modernization Programs Leadership - Implementation - System Management - Cost Optimization - Efficiency Improvement	- Executive Leadership - Agile methodologies - SDLC - Business Intelligence - Enterprise Performance Management - Operational Transformation - Organizational Restructuring - System Architecture

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• Strategic Planning • Team Leadership	• Best Practices Implementation

Work Experience

Cardinality.ai, Account Manager (2021 - Present)

Kevin Jones serves as Cardinality's Chief Strategy Officer where he provides strategic oversight, executive governance, and long-term growth alignment. With deep expertise in organizational transformation, go-to-market strategy, and account leadership across Human Health & Human Services (HHS) and GovTech markets, Kevin plays a pivotal role in shaping Cardinality's enterprise strategy and expanding its national footprint.

Kevin's background in large-scale organizational transformation and re-structuring enables him to guide complex public-sector programs through growth, modernization, and operational alignment. His leadership in account management, partner ecosystems, and client engagement has positioned Cardinality as a trusted strategic partner to state agencies nationwide. He brings a strong track record in building and scaling B2B and B2C partnerships, aligning business development with mission-driven outcomes.

Chimera Innovative Solutions Indianapolis, Principal (2020 - Present)

Implemented Project, and Systems Engineering methodologies to drive IT system and operational transformation within the DCS socio-technical enterprise. Restructured the IT organization to support four primary product management teams, developing roadmaps for IT and Technical processes to enable Agile design, development, and implementation for over 15,000 users, with a focus on IT infrastructure, software infrastructure, business intelligence, data and analytics, operations, IT governance, and enterprise performance management.

Department of Child Services of Indiana Indianapolis, Chief Information Officer (CIO) (2017 - 2021)

- Successfully reduced IT CAPEX and OPEX, saving over $500M in CAPEX and $1B in OPEX for the State of Indiana by modernizing the technology infrastructure and implementing cloud and mobile strategies.
- Designed and implemented an Omni-Channel API architecture for CCWIS and Title IV-D child support systems, resulting in a $100 million reduction in capital investment and a 50% decrease in total operational costs.
- Implemented an Enterprise Performance Management platform leveraging VR, Salesforce, and Mulesoft, leading to a 70% increase in efficiency and a $35 million annual reduction in staff turnover costs.
- Evolved PMO into DevOps, Product Delivery, and Supply Chain Management, creating an end-to-end Traceability Matrix and automating 75% of communication and product delivery processes.
- Implemented Enterprise Performance Management practices using BI, AI, machine learning, virtual reality, and analytical analysis, resulting in a 45% improvement in operational efficiencies and a reduction in risk and costs.

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Indiana Family and Social Services Administration, CTO/Deputy Director of Health Information Business Intelligence, Data, and Analytics (2014 - 2017)

Implemented Project and Systems Engineering methodologies to manage multi-year software and system development projects with budgets ranging from $30 million to $150 million. Led enterprise-wide IT transformation, reorganizing the IT structure to support four product management teams, implementing Agile approaches for system design, development, and implementation, and focusing on areas such as IT infrastructure, software infrastructure, business intelligence, data analytics, operations, IT governance, and enterprise performance management.

- CTO of a $13B/yr organization, had direct responsibility of over $3.7B annually in OPEX and over $800M in CAPEX over a 5-year investment. Divisional of 2800 direct reports and service over 6.7M member market with 1.5M direct clients. In addition to all Technology divisions, also had direct oversight of PMO, Data and Analytics, and Supply Chain Management & Logistics. For the first time in the agency's history implemented an enterprise architecture and solutions, responsible for $60M/week to $1.5M direct clients, on time, on budget, and without any impacts to the continuity of business, and certified in record time.
- Implemented enterprise architecture and solutions, delivering $60M/week to $1.5M direct clients on time, on budget, and without disruption to business operations. Achieved record time certification.
- Successfully replaced a 21-year-old system with Core MMIS as the system of record, reducing projected overruns by 50% through Systems Engineering, IV&V, and SDLC discipline. Provided executive leadership and technical systems engineering direction.
- Transformed data and analytics operational processes into business intelligence and enterprise performance management operations, designing new processes, and writing RFPs, support contracts, and KPIs for measurable results.

OneView, COO / CIO /VP of IT and Operations (2011 - 2014)

Responsible for providing innovative solutions and overseeing CAPEX and OPEX for multiple divisions including Production, PMO, IT, Development, Operations, Engineering, Engineering Sales, and Customer Support. Led the development and implementation of IT and business process roadmaps for the next 5 years, including IT governance processes via SDLC. Successfully managed M&A transactions, designed an enterprise transformation roadmap, and achieved a 10X evaluation for the organization in 18 months.

- Implemented an Agile approach to system and software development, and leveraged scrum, which modernized the entire software and hardware infrastructure.
- Implemented CMMI process model level 3, designed, developed, and implemented Business Intelligence tools for reporting and measuring the performance of all aspects of the organization and increasing profit margin by 42%.
- Designed, developed, and implemented IT governance systems and processes reduced OPEX by 32%, and CAPEX by 27% as well as ensured compliance with ITIL, Six Sigma, and ISO standard processes and procedures, as well as regulatory compliances of SAS, HIPAA, and SOX.

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- Responsible for designing, developing, implementing, and managing roadmaps for the divisions of Production, PMO, IT, Development, Operations, Engineering, Engineering Sales, and Customer support.
- Developed and implemented the office of the PMO, utilizing a standard methodology of Agile applying SCRUM techniques, to manage internal and external projects and Implementations.
- Reduced CAPEX by 23% and OPEX by 36% for all customer implementations, as well as a 25% reduction in time to delivery.
- Reduced CAPEX by 70% and OPEX by 60% for all internal projects and implementations, as well as a 69% reduction in time to delivery.
- Implemented a talent retention policy that would ensure that high performers are identified, and rewarded, as well as ensure that the right talents were being utilized for the right tasks.
- Reducing staff by 30%, while increasing productivity by 45%.

ExactTarget, Director of Configuration Manager/Sr. Project Manager (2009 - 2011)

Developed and implemented the organization's IT mission, strategies, and scope for the next 5 years, focusing on a large and highly transactional system with a high volume of API calls and 100% uptime requirement. Managed the IT department, including staff, project schedule, budget, and maximizing employee output, while overseeing web design, help desk support, software development, and coordinating technology issues across all divisions. Led the agile SDLC transformation, delivered new technologies, and provided project support and leadership on various projects.

- Responsible for one of the World's most transactional intensive systems in the world and all deployments of test, quality, and production software and hardware infrastructure configuration, managing over 5000 virtual machines across 5 WAN domains across 3 continents. Maintained 5 9's SLA and managed on and offshore resources for 24 X 7 X 365 system uptime, while averaging 280 deployments to production per year, covering Hotfix, Major Releases, and Minor releases.
- Implemented enterprise-wide SDLC transformation, and executed the planning, configuration management, and implementation of operational projects and an average of 280 planned deployments to production with a defined beginning and end. Works with client departments to coordinate systems testing, installation, training, and support.
- Developed and Implemented applications that were directly integrated with the Salesforce CRM API. These applications became the email and direct-targeted marketing platform for Salesforce.com and eventually the driving force behind Salesforce.com purchasing the company for over 2 billion dollars.

Standard Locknut, LLC CIO/Director of IT/PMO Director (2007 - 2009)

Responsible for developing and implementing the organization's IT mission, strategies, and scope for the next 5 years, along with implementing IT governance processes through SDLC. Managed the IT department, including staff, project schedule, and budget, while overseeing new technology delivery and coordinating technology issues with all divisions. Provided project support, leadership, and expertise in various projects, encompassing web design, help desk support, and software development, while handling traditional department management functions.

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- **CRM and ERP Integration:** Implemented CRM and ERP systems, and improved efficiency with custom tools, and automated processes.
- **Virtualization:** Designed and implemented virtualization of hardware infrastructure, reducing costs and increasing productivity.
- **Disaster Recovery and Business Continuity:** Developed robust disaster recovery and business continuity plans for high availability and quick recovery.
- **SharePoint:** Set up and administered Microsoft SharePoint, resulting in a paperless office and increased productivity.
- **ERP Integration:** Successfully integrated SAP ERP systems, and automated processes, and supported a large user base.

Thompson Distribution/Visual Source Studios/M&R- Eli Lilly's, Indianapolis, IN, COO/ Division President IT Director / PMO Director/ Software Engineer (1998 - 2007)

Developed complete IT Governance processes which reduced help desk volume by 37% in three months and reduced CAPEX but 37% and OPEX 46% by the delivery and management of new technologies; built teams encompassing web design, help desk technical support, and software development; and Implement all SDLC process Enterprise-wide from RFP/Contracts and conceptual design to implementation and post-implementation support. Applied software development methodologies such as agile, dynamic systems development model, scrum, spiral, and traditional waterfall.

- COO and President of 2 divisions within Thompson Distribution and VST growing in revenue from $500k to $50M in 24 months, and at the same time increasing profit margin from 20% to 42%. Led three private M&A transactions and added international supply chain and distribution in North America (Canada), Europe (France and Italy), and Asia (China).
- Developed B2B e-commerce applications integrated with CRM and ERP systems, allowing customers access to inventory and reducing customers' inventory turnover by over 100%. Develop processes to convert Proprietary CRM and ERP system data to migrate to ERP systems. The levers tools like SalesForce, Microsoft Dynamic AX/CRM, SAP, Epicor, and supported 3000+ users CRM and ERP systems. Utilized data warehouse, and business intelligence tools such as IBM Cognos, Oracle Hyperion, and Tableau, which were running on platforms such as Teradata, Microsoft SQL Server, and Oracle. In addition, implemented enterprise performance management, and data projects leveraging Hadoop, to enable evidence-driven decision-making processes for the organization.
- Delivered multiple systems and software development projects, where standard Systems Engineering and project management principles were applied to deliver projects on time and budget. Responsible for all aspects of the SDLC
- Performed infrastructure designing, planning, implementation, supporting, and transformation from mainframe and LAN environments to virtual-SAN and complete cloud-based environments. Demonstrated success in motivating, coaching, and leading technical design teams to achieve results. Consistently recognized for completing projects on time and within budget.

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Stacy Night - Project Manager

Professional Summary

Stacy is a seasoned public sector consulting leader with over 36 years of experience delivering enterprise technology solutions, program management, and solution architecture for state and local government clients. He has led major modernization efforts in child welfare, workforce development, licensing, unemployment insurance, and labor exchange systems, guiding complex projects from strategy through implementation. Stacy specializes in migrating legacy systems to modern platforms, with expertise spanning COTS, SaaS, and custom-built solutions. His leadership roles have included delivery executive, project manager, account manager, solution architect, and program director, consistently achieving measurable results in operational efficiency, customer satisfaction, and compliance.

Education and Certification

- Master's in Medical Informatics, Northwestern University School of Continuing Studies, Chicago, IL
- Joint Master's Degree in Public Affairs and Business Administration, The LBJ School of Public Affairs & Graduate School of Business, University of Texas at Austin, TX
- B.S., Economics, The Wharton School, University of Pennsylvania, Philadelphia, PA
- PMP Certification, Project Management Institute
- ITIL Foundations v3 Certification

Core Competencies

• Program & Project Management	• Agile, SDLC, and CMMI Practices
• Solution Architecture	• Requirements Analysis & Traceability
• Child Welfare & Workforce Development Systems	• IT Modernization & Migration
• SaaS & COTS Implementation	• Quality Assurance & IV&V
• Enterprise Architecture	• Customer Relationship Management
• Account & Stakeholder Management	• Performance Measurement & Continuous Improvement

Work Experience

Cardinality.ai – Delivery Executive (Feb 2025 – Present)

- Serves as the Delivery Manager on the State of Hawaii Department of Human Services (DHS) project to implement a Comprehensive Child Welfare Information System (CCWIS) using Cardinality's EmpowerPlatform for Child Welfare (EFCW) solution. Responsible for overall delivery quality, working with functional and technical teams to meet Hawaii DHS requirements.
- Serves as Project Manager for the West Virginia Department of Human Services (DoHS) Mobile Application Communication Software (WV-MACS) project to provide a communication portal for the State's existing CCWIS system. The system, based upon the EFCW solution, enhances stakeholder communication and collaboration to strengthen the State's foster care ecosystem. Responsible for managing the team's day-to-day activities, interacting with DoHS's PMO, and meeting with Project Sponsor and team leadership to achieve project goals.

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- Serves as Customer Satisfaction Executive for the State of Nevada Department of Education (DOE) Educator Licensure System project. Cardinality will replace the legacy licensure system with a SaaS solution based upon the EmpowerPlatform's Licensing and Knowledge Management capabilities. Responsible for overall customer satisfaction by providing deliverable quality assurance and acting as DOE's point of contact for project status and escalation.

NTT DATA, Inc. – Capture Manager/Solution Architect (Apr 2021 – Nov 2024)

- Served as Solution Architect on several large client initiatives for Device as a Service. Transitioned to Capture Manager role leading presales, strategy, partnerships, and solution architecture for Public Sector Digital Workplace Service offerings, including Device as a Service, Service Desk, Microsoft 365 Collaboration Management, and Digital Employee Experience.
- Developed and implemented a capture plan defining value proposition, win themes, discriminators, and key messages for each opportunity.
- Conducted market research and analysis to understand customer needs, requirements, and preferences.
- Established and maintained relationships with key stakeholders, decision-makers, and influencers within the customer organization and the industry.
- Provided guidance and direction to the proposal team on capture strategy, win themes, and customer insights.

NTT DATA, Inc. – Account Manager, State of Oklahoma (Sep 2020 – Mar 2021)

- Served as interim Account Manager with responsibility for performance of the entire account at State of Oklahoma, Desktop as a Service (DaaS) program managing the acquisition, distribution, and maintenance of computer devices for 30,000 employees.
- Managed relationship with the Oklahoma Office of Management and Enterprises Services Leadership Team, ensuring contract performance, and overseeing project financials.
- Focused on process improvement efforts for deployment activities.
- Worked with NTT DATA Client Delivery Manager to resolve issues impeding operational performance.

NTT DATA, Inc. – Account Manager, Texas Department of Transportation (Jan 2020 – Sep 2020)

- Served as Account Manager responsible for performance of the entire account at TxDOT.
- Managed relationship with TxDOT IT Leadership Team, ensuring contract performance, and overseeing project financials.
- Worked with NTT DATA Overall Delivery Manager to resolve operational issues.
- Assisted in transition to maintain and enhance PeopleSoft deployment at TxDOT.

NTT DATA, Inc. – Transformation Program Manager, Texas Department of Transportation (Jun2013 – Jan 2020)

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- Managed projects as part of a large IT outsourcing program, including development of future state enterprise architecture, application portfolio rationalization, implementation of SDLC processes, and decommissioning of obsolete applications.
- Led effort to solution and negotiate Statement of Work for Modernize Project and Portfolio Management program (TxDOTCONNECT).
- Established and led architectural review board.
- Led Enterprise Architecture and Business Development Team to identify, scope, plan, and initiate large transformation projects.
- Worked with Applications Development and Maintenance teams to plan, scope, estimate, and execute custom application and PeopleSoft enhancements.

NTT DATA, Inc. – Account Leader, Service Delivery, Commonwealth of Massachusetts (Oct 2010 – Jun 2013)

- Responsible for service delivery for all public sector clients in Massachusetts and Rhode Island.
- Managed client relationships, HR, account P&L, and quality assurance for deliverables.
- Served as Project Manager on a significant IV&V engagement, leading 8 consultants to assess third-party integrator deliverables.
- Provided SME and technical expertise to the MA Division of Elementary and Secondary Education, including work plan development, user strategy facilitation, and project charter creation.

NTT DATA, Inc. – SME, South Carolina Department of Employment and Workforce (Aug 2010 – Oct 2010)

- Provided subject matter and technical expertise to develop an IT Strategic Plan.

CGI Technology Group – Service Line Leader, Solutions Group (Jan 2008 – Feb 2010)

- Led National Service Line for Health and Human Services with over 50 staff delivering SME and technical expertise for HHS projects.
- Provided sales assistance in program areas including Child Welfare, MMIS, HIT/HIE, Integrated Eligibility/Case Management, and Labor & Workforce Development.

Deloitte Consulting – Director (Oct 1987 – Dec 2007)

- **NH Employment Security (Oct 2006 – Dec 2007):** Project Director leading a team of up to 28 to design, develop, test, and implement NH UI Modernization application, migrating from mainframe to web-based.
- **PA Department of Labor and Industry (Feb 2006 – Oct 2006):** Project Advisor and Workshop Facilitator for a large reengineering and systems development project to create a case management system. Facilitated As-Is/To-Be sessions, reviewed process flows/use cases, developed requirements/design, and built RTM.
- **Washington, DC CFSA (Oct 2004 – Feb 2006):** Technical Advisor on FACES.NET migration from PowerBuilder client-server to .NET.

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- **Massachusetts DSS (Mar 2005 – Jun 2006):** Project Director for FamilyNet (SACWIS) and STARS (IV-E Eligibility) maintenance. Established SOA and migrated to the internet platform.
- **Texas Workforce Commission (Aug 2001 – Mar 2004):** Project Director for browser-based labor exchange system (Hire Texas). Managed SDLC, performance testing, and debugging.
- **Massachusetts DET (Apr 1999 – Apr 2005 & Apr 2006 – Sep 2006):** Project Manager for functional requirements and conceptual design for Indiana Customer Self Service System adaptation. Conducted capacity planning, feasibility, and CBA. Managed MOSES application development and maintenance. Directed e-Government modernization of UI systems and WIA/Wagner-Peyser support systems.
- **Other Workforce Development Projects (Jan 1994 – Mar 1999):** Led Deloitte's Department of Labor programs service line, business development, and prototype creation for W-P, WIA, and UI solutions. PM on job matching and training case management systems for Indiana DWD, Puerto Rico DOLHR, and Wyoming DOL.

Kera Morelock - SME

Professional Summary

Accomplished Healthcare Leader with significant achievements attained through a team-based strengths approach to leadership, operations, quality, and effective program management. 20 years' experience in Managed Care and Medicaid with vulnerable member populations across several different care settings and platforms to include all SNP programs (DSNP, CSNP, and ISNP). Unique perspective and insight into care delivery and health plan administration. Member experience focused approach ranging from direct patient care in a nursing home setting to case management in members' homes. Policy and Government Programs Subject Matter Expert with recent CMS audit experience. Experience implementing Case Management Programs and SNP plans, RFP proposal management, interpretation and writing, health care quality and performance improvement, NCQA Accreditation, expertise in regulatory compliance, quality improvement, program management, delegation and vendor oversight, Part C reporting, and health plan implementations.

Education and Certification

- CAPELLA UNIVERSITY, Online program
  Degree: Masters in Healthcare Administration/Leadership Graduated:2019
- COLLEGE OF ST. CATHERINE, St. Paul, MN
  Degree: Bachelor of Science Major: Social Work Graduated: 2007
- ST. CLOUD STATE UNIVERSITY, St. Cloud, MN 2001-2003 Liberal Arts

Core Competencies

• Regulatory Oversight	• Medicare Advantage Expert | Special
• Problem Solving	• Needs Plans
• Staff Development |Training	• Relationship Management |
• Expert	• Collaboration
• Project Management | Expert	• RFP and Model of Care Development
• Facilitator	• Presentation Skills to Large groups
• Program Development|	• Case Management Operations
• Oversight	• PowerPoint | Word | Excel
• Quality Improvement	• Project Management | Organization

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• CMS | DHS | Medicaid Expert	

Work Experience

Cardinality-ai - Director Customer Success - May 2024 to present

Customer Success Responsibilities:

- Strategic Customer Engagement – Develop and maintain strong relationships with healthcare and government agency clients, ensuring their success with the company's solutions.
- Customer Advocacy – Serve as the voice of the customer internally, advocating for their needs in product development, support, and implementation strategies.
- Retention & Growth – Drive customer retention and expansion by demonstrating value, fostering satisfaction, and identifying opportunities for upselling and cross-selling.
- Performance Monitoring & Success Metrics – Establish KPIs and regularly assess customer health, adoption, and ROI to proactively address challenges.
- Escalation Management – Act as a key escalation point for high-priority customer issues, working cross-functionally to resolve concerns efficiently.

Healthcare Solutions Responsibilities:

- Product Strategy & Market Alignment – Guide the development and enhancement of healthcare solutions, ensuring they align with Medicaid, Medicare, and other healthcare program requirements.
- Regulatory & Compliance Oversight – Stay informed on federal and state healthcare regulations, ensuring solutions support compliance with CMS, HIPAA, and other standards.
- Implementation & Best Practices – Collaborate with implementation teams to enable deployment, adoption, and operational success for customers.
- Industry Thought Leadership – Represent the company in healthcare industry discussions, conferences, and forums, positioning the organization as a trusted partner

Navigate Health Advisory, Consultant (Jul 2022 - April 2024)

Medicare Part C Health Plan Services Consulting, Specialties and Function include:

- Advisory and performance of analysis, developing reports and deliverables.
- Medicaid HCBS Expert
- Participating in client interviews and capturing actionable items.
- Evaluating business operations and supporting performance improvement initiatives
- Preparing client-ready deliverables and presentations; assisting with making presentations to clients
- Assisting with the development of presentations, pitch, and proposal content
- Conducting healthcare research
- Medicare and Medicaid Compliance
- SNP and Case Management SME to include remediation planning, training, and education
- Internal Auditing and Monitoring
- CMS Audit Support

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- SNP Model of Care Creation and Submission
- State Medicaid RFP and Contract Writing and Review
- SNP and Care Management Implementation
- Quality and Performance Improvement planning and evaluation

NCQA, SNP MOC Reviewer (Contractor) (Oct 2023 - Present)

Special Needs Plan expert responsible for review and scoring of Health Plan Submitted Model of Care.

- SNP and Case Management Regulatory SME
- Review and Scoring of SNP Model of Care through IRT system

Devoted Health, SNP Program Director, (Jan 2022 - Jul 2022)

Assure operational excellence, compliance, and scalability, of Devoted's Special Needs Plans (e.g., DSNPs, CSNPs). Key cross functional influencer of all aspects of SNP business.

- Establish, monitor, and refine KPIs/targets for SNP programs + raise organizational awareness of program performance in alignment with Medicare Stars and HEDIS requirements
- Ensure ongoing adherence to CMS and state-specific requirements and ensure understanding of and adherence to state and federal requirements by relevant cross-functional stakeholders
- Liaises with internal and external constituents to centrally drive decision-making and enable consistency in operation, adherence to state and federal requirements, and high quality service across membership and partners
- Monitors program performance and effectively drives improvement and efficiency as needed
- Model of Care Development, submission, and SMAC attestation for Devoted's 7 SNP plans

MEDICA, SNP Program Manager, (2019 - 2021)

Monitoring the performance and adherence to the Centers for Medicare and Medicaid Services (CMS) regulatory requirements based on an approved Model of Care (MOC) submitted to (CMS). Provide a high level of program and product specific subject matter expertise and consultation, and is responsible for intensive oversight of the plan to ensure performance, quality, and regulatory adherence and CMS audit readiness.

- Clinical Model creation, ongoing monitoring, training, and oversight for Medica's 4 Special Needs Plans Models of Care
- Quality Improvement and Program Effectiveness
- Development and facilitation of training materials for internal teams,external delegates, and facilities participating in SNP plans
- Authoring, updating, and submission of all SNP Models of Care
- SNP Care Coordination CMS Audit Lead, preparing, and coordination of audit requests
- Project lead for various Government Programs Quality Improvement Projects
- RFP work (writing and consultation) for new lines of business within Government Programs

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- Implementation Lead for new Special Needs Plans (Dual Eligible and Institutional Special Needs Plan), and HCBS services

HEALTHPARTNERS, Minnesota Sr. Health Options (MSHO) / Minnesota Sr. Care Plus (MSC+) Lead and Specialist (2008 - 2019)

- Perform duties of Care Coordination and Case Management in accordance with MN Dept. of Human Services contractual agreement for MN senior health options and MN senior care plus services with HealthPartners. Coordinate with county social services, and case management systems. Incorporate unique primary care, acute care, long-term care, (HCBS) community services, and covered Medicaid and Medicare home care services.
- Work in partnership with member and/or authorized family members, decision makers, and primary physicians for member and ensure all party involvement in treatment planning and consent to medical treatment
- Perform comprehensive Health-Risk Assessments (HRA) to identify risks and chronic conditions such as daily living activities, risk of hospitalization, need for primary or preventative care, mental health services, and complete initial HRA for members within 30 days of enrollment
- Provide intensive case management for serious and persistent mental illness, pre-petition screening, court ordered treatment, developmental disabilities, and assessment of medical employment barriers
- Training and supervision of all Care Coordinator staff to include: Case Audit, mentoring, development of policies and processes

Chanakya Katukojwala - Solution Architect

Professional Summary
Chanakya is a software professional with over fifteen years of total IT experience with expertise in architecting, designing, and deploying solutions. Adept at maintaining focus on achieving bottom-line results while formulating and implementing technology and business solutions to meet diverse needs.

Education and Certification
- B.Tech (Computer Science) - Jawaharlal Nehru Technological University, India, 2006   - TOGAF-certified professional   - Microsoft-certified Azure Developer, Microsoft-certified Azure Architect   - Reactive Architecture: Domain-Driven Design, Sun-certified Java Developer

Core Competencies	
- Expert in digital transformation for large-scale enterprises. - Developed a low-code platform reducing client time-to-value by 75%. - Skilled in multi-cloud and hybrid system architectures. - Full lifecycle product implementation specialist.	- Implemented compliance standards for data security. - Converted monolithic architectures to microservices. - Holds TOGAF, Azure Developer/Architect, and Java certifications. - Established automated testing and coding best practices.

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• Experienced in cloud migration strategy and technical architecture. • Proficient in AWS DevOps, CI/CD, and serverless deployment. • Data pipeline development for healthcare analytics.	• Led the deployment of analytical tools and executive dashboards. • Mentored teams and led technical strategy in various projects.

Work Experience

Cardinality.ai - Solution Architect (Dec 2019 - Present)

Chanakya associated with Cardinality.ai provides consistent access to quality project opportunities in different architectural roles; below are the roles and programs with which he is associated: -

- Jan 2022 - Present, MDTHINK, Solution Architect
- Coming up with a migration strategy for agency application into the Cloud Platform
- End-to-end design of migration strategy and the activities included.
- Coming up with documentation for platform standards and technical reference architecture
- Closely working with the implementation team to ensure standards are met.

Amber Engine - DevOps Architect/Technical Architect (May 2020 - Present)

- End-to-end implementation of CI/CD in AWS infrastructure, came up with branching strategy for AWS CodeCommit, Implemented CI/CD for Serverless deployment strategy for AWS Lambda, SQS, API Gateway, s3 static web hosting, ECS, ECR using AWS CDK
- AWS Aurora cluster deployment
- AWS Blue/Green deployment

Goldfinch.ai - Principal Architect (Jun 2020 - Dec 2020)

- End-to-end implementation of Analytical products for Goldfinch AI
- Worked with the health care provider in the USA to establish their data strategy.
- Developed data pipelines for cleansing and transforming data for analytical needs.
- Implemented CI/CD for Serverless deployment strategy for AWS Lambda, SQS, SNS, and DynamoDB using Terraform.

Petram AI - Technical Architect (Dec 2019 - Apr 2020)

- Implementation of CI/CD for the existing product
- Designed and Implemented PII/PHI compliance for the product.
- Established best practices guidelines for branching strategy.
- Established Coding guidelines for quality product development.
- Incubated automated testing group for the product.

Infosys - Technical Architect (Oct 2013 - Dec 2019)

- Worked as Lead engineer in converting existing monolith applications to Microservices
- Worked with Azure service fabric for container orchestration.
- Worked with Solaris and PRO C for Monolith routine understanding.

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- Migrated ETL systems to Azure cloud with serverless architecture, created Core framework for re-use between Azure functions.
- Worked as Technical SME on Microsoft technologies, worked on modernization solution for Legacy CRM
- TFS GIT Implementation for Continuous Integration and Deployment
- Worked on Analytical CxO dashboard for KPIs on critical systems
- Worked on creating Outlook extension for Callback Scheduling

Infosys - Technology Lead, .NET (Sep 2010 - Sep 2013)

- Worked as Senior developer for a Web application for the Renewable Energy Intake program
- Created a solution for template-based form design for the Intake
- Implemented best practices for Service-oriented Architecture
- Implemented integrations with TIBCO software
- Worked on performance tuning for Demand System Management, which reduced process run time to 2 hours from 8 hours.

Infosys - Senior Software developer (Sep 2008 - Oct 2010)

- First member of flagship product under utility domain
- Demoed the program to various stakeholders
- Worked as a .net developer
- Tuned the notification logic to reduce the processing time

Josh Coats - Development Lead

Professional Summary

Engineering leader with 17 years of software development experience and 9 years of experience managing and scaling engineering teams to build high-impact web and mobile platforms. Proven expertise in team leadership, strategic planning, and cross-functional collaboration to drive technology initiatives and business growth. Adept at fostering high-performing teams, optimizing software development processes, and aligning engineering efforts with organizational objectives

- Josh serves as Security Lead for Cardinality's Educator Licensing Solution for the State of Nevada, where he leads implementation of security frameworks and compliance controls aligned with state policies. He manages risk assessments, penetration testing, RBAC enforcement, and incident response, ensuring system integrity and data protection.
- Previously at PAIRIN, Josh led security and compliance initiatives for SOC 2, HIPAA, and FedRAMP readiness, integrating secure DevOps practices and automated audit monitoring. His background includes leading secure, scalable platform development across multiple industries, making him well-equipped to support this project's cybersecurity, privacy, and compliance requirements.

Education and Certification

- Washington University in St. Louis, Masters of Engineering and Applied Science with a concentration in Computer Science, Aug 2006 - Jul 2008, St. Louis, MO
- DePauw University, Bachelor of Arts with a concentration in Computer Science, Aug 2002 - May 2006, Greencastle, IN

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Core Competencies

• Engineering Leadership & Team Building • Agile Methodologies & Process Optimization • Risk Management & Assessment • Security Awareness & Training • Data Protection & Privacy	• Security & Compliance (SOC 2, HIPAA) • Security Architecture & Design • Full-Stack Development (React, TypeScript, SQL) • Incident Response & Security Operations • Cloud Platforms (AWS, GCP) & Cloud Security • CI/CD & DevOps • Vulnerability Management

Work Experience

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Director of Engineering (May 2025 - Present)

Joined Cardinality as a Director of Engineering and playing the role of a Security lead for the Educator Licensing Solution Project for the State of Nevada

- Lead the implementation of security frameworks and compliance controls aligned with State of Nevada policies, ensuring the platform meets data protection and privacy standards.
- Conduct regular security risk assessments, vulnerability scans, and penetration testing to identify and remediate potential threats across application and infrastructure layers.
- Define and enforce role-based access control (RBAC), audit logging, and incident response protocols to ensure secure user access and traceability.
- Collaborate with development, cloud, and operations teams to integrate secure coding practices, perform security reviews, and support authority-to-operate (ATO) processes.

PAIRIN (Apr 2021 - Apr 2025)

Define the strategy, roadmap, and definition of the PAIRIN technology platform. Build and lead a team of engineers, QA testers, and designers to rapidly deliver valuable, innovative B2B solutions. Represent the engineering team and promote the technology vision while working closely with all parts of the organization.

(Promoted through Senior, Principal, and Director roles)

- Lead the engineering organization across web and mobile platforms, setting the vision, roadmap, and technical strategy to support rapid growth and innovation.
- Scaled and mentored high-performing teams (20+ engineers), driving a culture of technical excellence, collaboration, and continuous improvement.
- Modernized infrastructure on AWS, implemented CI/CD pipelines, and led the frontend migration to React with TypeScript resulting in a 98% reduction in deployment time and improved platform performance.

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- Spearheaded security and compliance initiatives including SOC 2, HIPAA, and FedRAMP readiness using Drata for evidence collection, gap assessments, and continuous monitoring.
- Oversaw platform integrations across multiple product lines, improving scalability, reliability, and architectural alignment with long-term business goals.

LiteracyPro (March 2016 - April 2021)

Lead Software Engineer

- Built and scaled engineering teams, mentoring junior and mid-level engineers.
- Led the development of CommunityPro Suite, optimizing workforce solutions and community engagement.
- Played a key role in securing the acquisition of CommunityPro Suite by driving product innovation and technical excellence.

rabble+rouser | (October 2012 - March 2016)

Senior Software Engineer

- Managed multiple teams (5-15 engineers), overseeing backend and frontend development.
- Designed and developed custom CMS solutions, later transitioning to CraftCMS.
- Mentored engineers and improved development workflows.

Isilus | (May 2009 - October 2012)

Lead Application Developer

- Led a software development company, managing full stack development for a diverse set of clients.
- Delivered end-to-end solutions, handling every aspect of project lifecycle, from requirements gathering to deployment and maintenance.
- Leveraged expertise in PHP, Java, MySQL, JavaScript, and Linux administration to build scalable, client-focused solutions.

Afzal Ahmed Maqbool – Data Conversion Lead

Professional Summary

Afzal holds a Master's degree in Data Science and brings strong experience across data transformation, migration, and analytics. His past roles have included leading ETL development, designing data pipelines, and executing large-scale data conversions in both on-prem and cloud environments. With hands-on expertise in SQL, Python, Tableau, and Azure, and a proven track record supporting data migration and modernization for multiple clients.

Education and Certification

Master of Science in Data Science Aug 2022 - May 2024 . UNIVERSITY OF THE CUMBERLANDS, Williamsburg, KY, US

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- Relevant Coursework: Data Science Programming with Python, Data Management for Data Science, Statistics for Data Science, R Programming, Big Data, Deep Learning, Data Mining.

Bachelor of Engineering in Computer Science and Engineering
2016 – 2020 ANNA UNIVERSITY, Chennai, India

- Relevant Coursework: Database Management Systems, Artificial Intelligence, Data Mining, Grid and Cloud Computing, Information Retrieval, Design and Analysis of Algorithms, Programming and Data Structures.

Certifications

- Microsoft Certified: Power BI Data Analyst Associate
- Microsoft Certified: Azure Fundamentals
- Microsoft Certified: Azure Data Fundamentals
- Google Data Analytics Professional Certification
- ICTACT: Data Science and Big Data Analytics
- Generative AI for Data Scientists

Core Competencies

- Scripting, Analytics and Reporting: Python, R Programming, Unix Shell Scripting, MS Excel (Advanced), Tableau, Power BI.
- Database / ETL: MySQL, T-SQL, NoSQL, DynamoDB, Oracle, MS SQL Server.
- Machine Learning: Regression, Random Forest, Neural Network, Text Analytics, Feature Selection, Cluster Analyses, NLP, Time Series Forecasting
- Programming Languages and Tools: C++, Spark, Map Reduce, MS Office, JIRA, OpenAI.
- Cloud & OS Platforms: MS Azure, AWS, Google Cloud, Windows, MacOS

- Scripting, Analytics and Reporting: Python, R Programming, Unix Shell Scripting, MS Excel (Advanced), Tableau, Power BI.
- Database / ETL: MySQL, T-SQL, NoSQL, DynamoDB, Oracle, MS SQL Server.
- Machine Learning: Regression, Random Forest, Neural Network, Text Analytics, Feature Selection, Cluster Analyses, NLP, Time Series Forecasting
- Programming Languages and Tools: C++, Spark, Map Reduce, MS Office, JIRA, OpenAI.
- Cloud & OS Platforms: MS Azure, AWS, Google Cloud, Windows, MacOS

Work Experience

Data Conversion Lead – Cardinality.ai (Georgia SHINES Project), Remote, USA Oct 2024 – Present

- Led end-to-end data conversion efforts for Georgia SHINES, ensuring accurate migration of legacy child welfare data into the new EmpowerPlatform.
- Designed and executed data validation strategies to maintain data integrity and compliance with federal CCWIS requirements.
- Collaborated with cross-functional teams to map, cleanse, and transform data from multiple legacy systems using Python and Talend ETL tools.

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- Worked closely with business analysts and QA teams to support iterative testing and defect resolution across all conversion phases.

Data Science Intern – GM Financial, Remote, USA May 2023 – Aug2023

- Singlehandedly conducted statistical and quantitative research, established a recommender system by analyzing large data sets of over 500k employee training series using data mining algorithms and advanced ML algorithms (LDA, BPR).
- Performed A/B tests and improved recommendation accuracy to around 67%, which was 25% higher than the previous system.
- Engineered an ML-powered system that scrapes, extracts important feature sets, and predicts outcomes.
- Implemented real-time data pipelines to transfer data from data lakes to the reporting environment using Python scripts and complex SQL queries.
- Collaborated with stakeholders including engineering, sales, and business leaders.
- Implemented Agile Scrum methodology using the JIRA tool.

Data Analyst Intern – VERSANT HEALTH, Linthicum Heights, MD, USA Jan 2023 – Apr 2023

- Developed ETL with large datasets to determine and monitor the credit worthiness of financial institutions & Customers.
- Created over 5+ ETL mappings and workflows utilizing various ETL transformations, including lookups, update strategy, and expressions.
- Contributed to designing OBIEE 12c RPD according to the business model, and reviewed reports, and dashboards for accuracy and effectiveness.
- Built repository across all three layers: physical, Business Model and Mapping (BMM), and presentation layers to enable effective data flow and reporting.
- Created Unix Shell Scripts to automate source availability checks, enhancing data workflow efficiency.
- Built a comprehensive counterparty database and developed interactive dashboards and reports in Power BI, facilitating informed credit approval decisions.

Data Analyst - TRANSWORKX GLOBAL SOLUTIONS, Bengaluru, India Dec 2020 – May 2022

The project is part of Citibank's initiative for global operational risk mitigation, aimed at using Tableau for visualizing KPIs and metrics to achieve Governance Risk and Compliance as mandated by Federal Regulators. As a Tableau Analyst, my role involves supporting the development of Tableau visualizations and building & publishing customized interactive dashboards. I work with business users and POs for requirement gathering, Jira story creation, and assist in testing, including coordination with users for UAT.

- Supporting a team of Tableau developers to ensure the successful delivery of projects within stipulated deadlines.
- Assisting in the coordination with vendor teams for migration to Tableau cloud and providing updates to senior management.
- Participating in peer review and unit testing to ensure minimal defects in SIT and UAT.

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- Training and guiding non-technical business leaders in using dashboards and reports by creating training decks and technical mapping documents.
- Collaborating with data engineers to design and develop data sources and resolve production issues.
- Improving Tableau extract performance using SQL optimization strategies like indexing and materialized views.
- Designing and developing data sources using custom SQL queries on Hadoop to extract large datasets.
- Automating Tableau extract refresh through AutoSys jobs to ensure synchronization with ETL loads and eliminate the risk of stale data.
- Designing and maintaining data models that support business intelligence needs, ensuring data integrity and consistency.
- Analyzing, debugging, and providing timely resolutions to production issues to ensure reviews are completed within deadlines.
- Assisting in the development of the Business Risk, Compliance, and Controls Committee (BRCC) reports with detailed drilldowns used by Citibank country heads.
- Preparing monthly ad hoc reporting in alignment with client needs.
- Evaluating the feasibility of POCs using Tableau Desktop and Tableau Prep for addressing business requirements to load extensive datasets.
- Utilizing advanced Excel functions (pivot, xlookup, vlookup) for data validation and exploration.

Data Science Intern - EYEOPEN TECHNOLOGIES, Chennai, India Jun 2020 – Nov 2020

- Implemented a real-time dashboard for monitoring critical sales metrics, providing prompt feedback to senior management.
- Developed ETL processes for analyzing key advertising metrics, aiding data-driven decision-making.
- Implemented a revenue prediction model using the Random Forest algorithm, improving forecasting accuracy.
- Collaborated with cross-functional teams to ensure effective information flow and project success.

Sagar Mehta - Test Lead

Professional Summary

Meticulous Test Lead with 9 years of experience assessing system functionality & a stellar record of collaborating with software developers to produce robust, bug-free programs that meet business & consumer needs.

Education and Certification

- University of Nebraska At Omaha, Omaha, NE
  Master of Science: Management of Information Systems (05/2016)
- University of Mumbai, Mumbai, India
  Bachelor of Engineering: Computers (08/2011)

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Core Competencies

• Software Quality Assurance & Testing	• Risk Assessment & Mitigation
• Agile & Scrum Methodologies	• Cross-Browser & Mobile Testing
• Test Strategy & Planning	• Performance & Regression Testing
• Manual & Automated Testing	• Quality Metrics & KPI Monitoring
• Defect Management & Reporting	• Team Collaboration & Project Communication
• Test Case Design & Execution	• Continuous Improvement & Process Optimization
• Jira, Confluence & Test Management Tools	
• Automation Scripting (Selenium, Core Java)	

Work Experience

Cardinality.ai - Testing lead (Jul 2024 - Present)

Project: MDTHINK Child Support Administration (CSA)

- Led end-to-end testing efforts for complex projects, including planning, designing, and executing test strategies across multiple platforms.
- Managed a team of testers, providing mentorship, task allocation, and performance feedback to ensure timely and high-quality deliverables.
- Collaborated closely with cross-functional teams including developers, business analysts, and product owners to define test requirements and ensure comprehensive coverage.
- Designed, implemented, and maintained test automation frameworks to improve testing efficiency and reduce manual effort.
- Conducted risk analysis and impact assessments to prioritize testing activities and ensure critical functionalities are validated.
- Oversaw the creation and maintenance of detailed test plans, test cases, and defect reports using tools like JIRA, TestRail, or ALM.
- Ensured adherence to quality standards and best practices across testing processes, including Agile and Waterfall methodologies.
- Led defect triage meetings and worked with development teams to ensure prompt resolution of issues.
- Reported testing metrics and quality status to stakeholders, highlighting risks and recommending corrective actions when necessary.
- Supported UAT (User Acceptance Testing) by coordinating with business users and ensuring all business requirements were tested effectively.

IQVIA Inc - Software QA Engineer (May 2016 - June 2024)

Bridgewater, NJ

- Deal with multiple projects and responsible for management and handling of testing activities for Squad of 10 Testers.
- Build overall test strategy and provide project leadership.
- Monitor and keep a track of Project via Jira Dashboard/Confluence.

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- Planned and devised cohesive test plans for projects using advanced testing technologies - Manual and Automation.
- Operated under Agile and Scrum frameworks to complete releases and well-organized sprints.
- Designed, executed and maintained automated test scripts for in-project
- deployment.
- Documented testing procedures for developers and future testing use.
- Provided regular updates to team leadership on quality metrics by communicating consistency problems or production deficiencies.
- Monitored KPIs to proactively address bottlenecks and quality issues.
- Conducted risk assessments to identify and mitigate potential quality issues.

Proxibid Inc - IT QA Intern (May 2015 - May 2016)

Omaha, NE

- Requirement Analysis, create test cases, system testing and create bug tickets in JIRA
- Maintained complete, accurate and Ie**IGATE Global Solutions (Now Called As Capgemini) - Software QA (Dec 2011 - Jul 2014)**
- gible test records, reviewing data for accuracy and trends and communicating concerns to supervisor.
- Recorded and organized test data for report generation and analysis.
- Documented and executed detailed test plans and test cases and summarized and logged findings for reporting purposes.
- Involved in Mobile Testing, Different OS testing and Cross-Browser Testing.

Engineer

Mumbai, India

- Designed, executed and maintained automated test scripts for in-project deployment.
- Involved in manual/automation testing of the Device Data Translator application
- Understanding the application for creation of viewpoints and test cases and execution for client-side testing
- Authored and maintained well-organized, efficient and successful test cases for the entire team.
- Daily meetings with Project leadership and suggest Optimal solutions for Improving the Software.
- Developed and maintained defect databases for known issues.

Ryan Duke - Business Analyst

Professional Summary

Dynamic child welfare leader with 22 years' experience spanning state government and consulting with Deloitte. Proven expertise in program leadership, policy development, staff management, and system improvement. Skilled in building high performing teams, driving operational excellence, and strengthening child welfare outcomes. Recognized for reducing turnover, improving placement

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stability, and leading large-scale system changes including CCWIS implementation.

Education and Certification

- B.S. in Social Science, Communications, Criminology, Florida State University 08/1995 - 04/2000 , Tallahassee, FL
- Child Welfare Protective Investigator-Supervisor (FL Certification Board) (04/2012 - 10/2027)
- Lean Six Sigma Green Belt Certified (Project Leader) (03/2018 - Present)
- Certified Scrum Master (Scrum Alliance) (08/2022 - 08/2028)
- Supervisor for Excellence graduate (FL Dept. of Children and Families) (05/2009 - Present)

Core Competencies

Executive Leadership and Management: Operations oversight, HR, budgeting, strategic planning, coaching and mentoring, relationship **Child Welfare Expertise:** Intake, complex and high profile investigations, prevention, foster care, adoption, licensing **Policy and Data:** Statewide policy development, legislative analysis, Quality Assurance, CQI, performance management, data analysis	**Stakeholder Engagement:** Partnership and relationships with internal and external including CBCs, judiciary, community providers, state leadership **Technology and Systems:** CCWIS/SACWIS (FSFN), Agile/Certified Scrum Master (CSM), Lean Six Sigma Green Belt

Work Experience

Cardinality.ai Business Analyst September (2025 - present)

Project: New York OCFS Foster parent licensing solution

- Led requirements elicitation and user story development with State licensing staff, providers, and program leadership to document end-to-end foster parent licensing workflows.
- Translated regulatory and policy requirements into functional specifications, validation rules, and configurable business processes within the EmpowerPlatform.
- Supported UAT planning and execution by developing test scenarios, validating system behavior against business rules, and coordinating defect triage with the configuration team.
- Maintained requirements traceability, change impact analysis, and documentation to support compliance, reporting, and ongoing system enhancements.

Statewide DCF Policy Manager, Intake and Investigations FL Department of Children and Families 01/2025 - 08/2025 , Lakeland, FL (Headquarters)

- Directed statewide policy for child welfare Intake and Investigations, ensuring alignment with state/federal law.
- Authored and reviewed legislative budget reviews and policy briefs to guide decision-making.
- Facilitated training & development within the team, engage with field staff to establish consistent policy, & contribute to CCWIS development to ensure alignment with state policy.

Sr. Consultant, Business Analyst, Scrum Master Deloitte Remote, Tampa, FL 07/2022 - 12/2024

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- Led Agile teams modernizing state SACWIS to CCWIS; developed user stories, workflows, wireframes, and business rules. Wrote test scripts and performed testing. Held daily meetings with our developers and daily stand-ups with the product owners.
- Facilitated face to face client workshops, sprint demos, and UAT testing to deliver high-quality system improvements.
- Worked in Software Development Life Cycle; led JADs and Discovery sessions, and assessed for other system impacts.
- Authored winning proposals, represented Deloitte at state child welfare summits.

Region Operations Manager FL Department of Children and Families 10/2020 - 08/2022 , Lakeland, FL

- Provided leadership, management, and administrative oversight of 18 teams and 150+ staff serving a population of nearly 1M. Co-led monthly Circuit 10 System of Care. Member on the ARC Committee.
- Reduced turnover from 31% to 16.8% (vs. state avg 43%). Consistently achieved top 5 statewide performance ranking across 20 circuits.
- Reduced out-of-home placements to lowest in 10 years; maintained 70% kinship placement.
- Optimized relationships within the Dept. including the Quality Office, Program Office, attorneys, judiciary, contracted providers, lead agency, Guardian Ad Litem, school systems, law enforcement, & elected officials. All about enhancing our child welfare system of care.
- Resolved client complaints, handled HR & personnel issues, monitored overtime & budget, & completed routine performance evaluations; Developed administrative policy & improved organizational processes to enhance quality, performance, productivity, & efficiency.

Program Administrator FL Department of Children and Families 04/2019 - 10/2020 , Bartow, FL

- Successfully directed a service center of 50+ staff; improved team efficiency and morale and reduced turnover to 25%.
- Conducted Hiring, training, & development for supervisors, analysts, & investigators.
- Oversaw complex investigations, ensuring child safety and effective decision-making. Received on average 275 investigations/month.

Child Welfare Specialist, Central Region (04/2017 - 04/2019) Child Welfare Specialist, Circuit 10 (03/2011 - 4/2017) FL Department of Children and Families 03/2011 - 04/2019 , Bartow, FL

- Assessed in-depth data trends, created ad hoc reports, & developed and led presentations to inform decision making.
- Conducted Quality Assurance reviews, data analysis, and statewide training; improved fidelity to Safe Methodology.
- Trained & mentored new Family Services Specialists, Supervisors, & Specialized staff to elevate staff competency.
- Led staff certification and recruitment, cutting vacancy rate from 40% to full staffing fostering a positive work environment and improving team culture.

Child Protective Investigator Supervisor (05/2007 - 03/2011) Child Protective Investigator (03/2003 - 05/2007) FL Department of Children and Families 03/2003 - 03/2011 , Bartow, FL

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- Successfully managed a team of 6 investigators, ensuring high performance & fostering a collaborative environment.
- Conducted routine performance evaluations to support team development & enhancement of skills. Maintained high morale, resulting in consistent quality work products & elevated team performance.
- Investigated child abuse reports, ensuring child safety & mitigating risks of harm.
- Provided assistance to families in obtaining services & counseled them on strategies to ensure child safety. Removed & placed children who were in imminent danger & support to those affected families.

ACHIEVEMENTS AND LEADERSHIP

- Reduced turnover and out-of-home placements, driving statewide recognition for performance.
- Recipient of multiple DCF awards in QA, investigations, and supervisory excellence.
- Appointed by Lakeland Mayor to serve on Nuisance Abatement Board (2025–2033) and Code Enforcement Board (2019–2024).
- Volunteer youth sports coach with 150+ service hours.

Harsha Velamuri - Integration Lead

Professional Summary

With a wealth of 17 years of experience, Harshavardhan stands as a Senior Service Manager adept at collaborating with leadership teams throughout the enterprise. His primary focus lies in translating data into actionable insights crucial for informed, data-driven business decisions. Harsha is recognized for his instrumental role in assisting leadership on initiatives geared towards generating new revenue, retaining existing revenue, and facilitating cost savings

Education and Certification

- B.Tech. Electronics and Communication Engineering, India, 2006
- Introduction to Big Data, San Diego University
- Big Data Integration & Processing, San Diego University
- Agile SAFe practitioner certification
- DB2 UDB V8.1, IBM.0

Core Competencies

• Expertise in unlocking business value from data assets • Enterprise Level Solutions Architect • Managing product life cycles and SDLC	• Experience managing the Georgia Foster Care Provider Licensing project for the Department of Human Services. • Experience managing multiple projects for HHS agencies

Work Experience

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Project Manager, Cardinality.ai, Georgia DHS Foster Care Project (2023 - Present)

Harsha joined Cardinality.ai in Sep 2023. Since then, he has worked on the Georgia DHS Foster Care project. He serves as the Project Manager, bringing years of project management experience across different realms of Information Technology domain, HHS based Government entities.

- Collaborate with stakeholders to define project scope, objectives, and requirements.
- Develop detailed project plans, timelines, and resource allocation strategies.
- Lead and manage a team of developers, designers, testers, and other project members.
- Assign tasks, set clear expectations, and provide support to ensure timely and high-quality project execution. Identify potential risks and issues that may impact project delivery.
- Develop mitigation plans and work closely with teams to proactively address challenges.
- Act as the main point of contact between the project team and clients or internal stakeholders.
- Provide regular updates on project progress, milestones, and any changes to scope or timelines.
- Manage delivery of solution from conceptualization to implementation for several customer facing products on various platforms and technologies.
- Guide and lead a group of developers, quality analysts, business analysts delivering solutions and products to financial service customers.
- Performed troubleshooting, provide root cause analysis and resolve issues throughout the lifecycle

Fidelity National Information Services, Senior Data Analytics Manager (2019 - 2023)

- Defined, maintained, and extended functional product architecture for several Financial Services Applications.
- Partnered with stakeholders to understand business strategies and objectives.
- Served as SME for translating client data into actionable insights to make strategic business decisions.
- Reviewed functional and technical designs to identify areas of risk and missing requirements.
- Documented and communicated opportunities to leverage inter-project synergies and expose application assets for enterprise consumption and reuse.
- Played a key role in coordinating and managing various cross functional business & technical teams.
- Guided and led a group of developers, quality analysts, business analysts delivering solutions and products to financial service customers.
- Ensured development is done right the first time.
- Managed full software development lifecycle including testing and implementation and post-implementation support.
- Maintained a project plan for the delivery team.

Digital Management LLC, Data Analytics Manager (2013 - 2019)

- Accountable for creating and maintaining project management plans, monitoring project milestones and deliverables.

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- Collaborated with key business leaders to drive business intelligence solutions and provide insights to better manage and grow the business.
- Played a key role in designing, developing and managing Business Intelligence, Data Warehousing and Data Analytics systems.
- Managed delivery of solution from conceptualization to implementation for several customer facing products on various platforms and technologies.
- Responsible for directing the project team in end-to-end Reporting and Data Analysis activities including Data Extraction, Validation, Cleansing, Enriching.

Cognizant Technology Solutions, Team Lead (2004 - 2007)

- Led and mentored a team of 15 members in data warehousing and business intelligence projects
- Converted business requirements into robust technical designs.
- Lead the efforts to design and implement enterprise-wide Self Service BI.
- Designed, developed, and maintained reports and dashboards using SAP Business Objects

Cognizant Technology Solutions, Software Engineer (2007 - 2008)

- Analyzed data, identified required data elements, extracted and transformed data from various data sources using SAP BODI ETL tool.
- Developed reporting assets using SAP Business Objects Universe, SAP Webi reporting tool and SAP Xcelsius Dashboards.
- Developed complex universes in the SAP Business Objects platform using loops, contexts, traps.
- Performed troubleshooting, provided root cause analysis and resolved issues throughout the lifecycle.

Derrick Stephens - Training Lead

Professional Summary

Derrick Stephens is a dynamic professional with a robust background in business development, immersive learning, and clinical social work. At Florida State University and in his previous roles, Derrick has skillfully merged behavioral science with cutting-edge technology to devise and lead transformative solutions in the human services sector. His leadership has not only spurred strategic growth and streamlined operations but has also markedly enhanced educational and clinical outcomes. His expertise in Agile methodologies and product lifecycle management has been pivotal in driving innovative projects, such as the development of AI-enhanced training platforms and mixed reality simulations, which have set new standards in child welfare training. Additionally, Derrick is a member of the American Bar Association's Center for Children's Law. His visionary thinking and data-driven decision-making have established him as a leader adept at spearheading complex, impactful projects.

Education and Certification

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- Master of Business Administration, University of Central Florida, Orlando, FL
- Master of Social Work, University of Central Florida, Orlando, FI
- Bachelor of Social Work, University of Central Florida, Orlando, FL
- NVIDIA Fundamentals of Deep Learning (2024)
- Licensed Clinical Social Worker (FLDOH #11477)
- Lean Six Sigma White Belt (2015).

Core Competencies

- Training Delivery & Facilitation - Instructional Design & Curriculum Development	- Performance Measurement & Data-Driven Training - Coaching & Team Development

Work Experience

Solutions Engineer - CCWIS SME, Cardinality.ai (May 2024 to Present)
Project: Hawaii Child Welfare Implementation, New York OCFS Foster Parent Licensing Solutions

- **Translate child welfare and foster care licensing policies, regulations, and business processes into detailed functional and technical solution requirements.**
- **Lead JAD sessions and workshops** with state program staff, caseworkers, licensing specialists, and IT teams to capture, validate, and refine business needs.
- **Design end-to-end CCWIS-compliant workflows**, including intake, investigations, case management, provider licensing, ongoing monitoring, and permanency processes.
- **Guide the configuration and customization** of Cardinality's EmpowerPlatform to meet federal CCWIS requirements and state-specific program rules.
- **Develop functional specifications, data models, and integration requirements** for connecting with external systems (SACWIS, background checks, Medicaid, education, court systems, etc.).
- **Ensure alignment with federal CCWIS regulations**, including data quality, interoperability standards, reporting requirements, and bi-directional data exchange.
- **Provide SME expertise during solution design reviews**, sprint planning, sprint reviews, and UAT to ensure the system meets program objectives.
- **Work closely with QA teams** to define test scenarios, validate functionality, and ensure compliance with business rules.
- **Assist the training and change-management teams** in preparing user guides, process flows, and role-based training materials.
- **Participate in federal reviews (AFCARS, NYTD, CFSR-related requirements)** to ensure compliance and readiness.
- **Act as a liaison between technical teams and program leadership** to ensure project objectives are met on time and within scope.

Florida State University (College of Social Work, Florida Institute for Child Welfare) Innovation and Immersive Learning Manager | Research Faculty. (Mar 2022 - Present)
- Responsible for developing, testing, and deploying visionary innovations and technological solutions.

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- Analyzing Florida's child welfare workforce and growing ecosystem to stay ahead of market trends in artificial intelligence, mixed reality, SaaS platforms, mobile applications, and simulation labs.
- Cross-Functional Leadership: Collaborates closely with FICW's executive director and assistant directors to hire, lead, and retain a high-performing, cross-functional team comprising Directors, Product Managers, Researchers, Instructional Designers and UX/UI Designers.
- Market Analysis: Performs in-depth market analyses, crafting FICW's value proposition and product positioning, leveraging data analytics, logic models, and implementation science to develop informative product strategies.
- Agile Methodology: Leads a team in end-to-end software development projects, regularly evaluating product performance and experience, ensuring we remain at the industry's forefront.
- Research and Development: Collaborates with the Director of Research on product conception, UX/UI design, and implementing iterative improvements based on data-driven insights, user feedback, and industry trends.
- Collaboration and Influence: Represents FICW at local, state, and national meetings, workgroups, and boards to build and enhance the institute's reputation, ensuring a robust and trustworthy ecosystem.

Florida State University (College of Medicine, Department of Behavioral Sciences and Social Medicine) – Principal Investigator I Research Faculty (Apr 2018 - Mar 2022)
- Cross-Functional Leadership: Served as Principal Investigator on a statewide comprehensive behavioral health curriculum and training program grant for child welfare professionals. Trained 2500+ professionals.
- Problem-Solving: Oversaw and monitor all aspects of contract negotiation, training curriculum and program development, monitoring and evaluations, deliverables, key performance metrics, and customer relations.
- Innovation and Creativity: Designed and implemented comprehensive training programs rooted in adult learning theories, leveraging interactive, immersive, and remote learning approaches.
- Collaboration and Influence: Collaborated with and maintained genuine, authentic, and consistent relationships with adult learners, administrators, faculty, state government officials, and community stakeholders.
- Team Management: Effectively led and managed a team in delivering mixed-mode (in-person/virtual) training content throughout the Covid-19 pandemic.
- Data and KPI Tracking: Used data to measure success, analyze trends, and develop proactive actions to continuously improve the learning experiences for adult learners. Motto: Learn, Iterate, and Improve.

Cogstate – Director of Sales and Business Intelligence (May 2017 - Apr 2018)
- Go-to-Market Strategies: Played a pivotal role in developing and executing a comprehensive go-to-market strategy for the deployment and performance of the company's SaaS platform, Cognigram, a scientifically valid rapid cognitive
- assessment tool.
- Cross-Functional Leadership: Modeled behaviors to foster a culture of innovation,

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collaboration, and accountability. Provided guidance and mentorship to team members to ensure individual and collective success. Accomplished 185% of the goal.

- Communication and Presentation: Prepared and delivered technical content to customers, including presentations about validity and reliability, cognitive assessment tools, SaaS platforms, and brain science.
- Conducted regular customer meetings for product demonstrations, customer onboarding, cognitive testing, and relationship management.
- Problem-Solving: Led development and contract negotiation for 3yr vs. 1yr subscription model for the SaaS platform in alignment with the company's overall objectives to drive growth and customer satisfaction.
- Data and KPI Tracking: Had a hands-on approach in monitoring key performance indicators (KPIs), financial metrics, and market research to identify opportunities for product enhancement, differentiation, and new market penetration.
- Cross-Functional Collaboration: Developed, published, and maintained a product roadmap in collaboration and consultation with the broader Leadership, Product Management, and Clinical team across a global company.

Home Healthcare of Florida - Director of Business Development (Jun 2016 - May 2017)

- Collaboration and Influence: Responsible for driving end-to-end home healthcare solutions for health systems, surgical centers, skilled rehabilitation facilities, and physician offices, offering the company's full set of service lines solutions based on the identified needs of customers.
- Communication and Presentation: Prepared and delivered technical content to customers, including presentations about services and solutions, medical device products, specialty topics, etc. Conducted regular customer meetings for relationship management, tracking health outcomes, and education on new services.
- Team Management: Led a sales team utilizing reflective supervision and motivational interviewing techniques to foster a culture of innovation, collaboration, and accountability. This resulted in exceeding the annual Medicare referral targets by 30%.
- Innovation and Creativity: Led the rollout of Salesforce CRM (the SaaS platform) to the sales team, improving productivity and customer relationships. Collaborated with the Clinical Director to establish new service line solutions based on identified market needs (PICC line, transitional care, and psychiatric nursing).

Insight Telepsychiatry – Southeastern Account Executive (May 2014 - Jun 2016)

- Go-to-Market Strategies: Led Southeastern region go-to-market sales and marketing strategy, achieved increased brand recognition and market penetration, and achieved a 25% growth in the territory within two years.
- Problem-Solving: Responsible for revising the company's consult response time matrix, leading to increased customer satisfaction and engagement, resulting in a 25% increase in renewal contracts across the sales team.
- Collaboration & Influence: Developed and maintained relationships with c-suite healthcare executives, resulting in consistently exceeding sales targets. Achieved $5M+ in new and renewal contracts within two years.
- Product Lifecycle Management: Participated in the end-to-end development lifecycle of an online tele-behavioral health SaaS platform, from concept to deployment.

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Collaborated closely with product management, design, clinical, and other cross-functional teams to define product requirements, prioritize features, and deliver high-quality solutions on schedule.

Mederi Caretenders – Account Executive (May 2010 - May 2014)
- Team Management: Managed internal and external relationships and maintained contacts within the field, which resulted in increased medicare referrals. Was part of the top AE 400+ Referral Club and achieved 1M+ annually.

Clinical Social Worker (SW #11477) | Executive Coach (May 2010 - Present)
- UX/UI Design Principles: Expertise in behavioral sciences and human behaviors provides unique perspectives and insights on user-centric design, ensuring both functionality and emotional engagement for users.

5.1.2. Relevant Project Experience and References (RFP Section 4.3.1.2)

The Vendor should supply documentation/references showing their track record of previous experiences with similar projects in scope/size for professional licensing boards.

Cardinality has delivered modern licensing systems to multiple U.S. state agencies with needs similar to WVBOM. Below are our successful engagements that closely align in scope and complexity with the goals and requirements outlined in RFP #CRFP 0945 BOM2600000001.

Reference 1:

Client Name: State of Wyoming Department of Health, Division of Healthcare Financing	
Contract Title: Home & Community Based Services, Care Case Management system (CCMS)	
Client Address	Herschler Building, 122 W 25th St, Cheyenne, WY 82002
Client Contact Details	Name: Kaitlyn Wilson Title: WINGS Project Manager Phone Number: 307-214-5358 Email Address: kaitlyn.wilson@wyo.gov
Contract Amount	$17.16 million
Contract Effective Dates	September 2024 - June 2036
Brief Contract Description	

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Project Description: Cardinality partnered with the Wyoming Department of Health (WY DOH) to implement a modern Care/Case Management Solution (CCMS) for the Home and Community Based Services (HCBS) program. The EmpowerHealth Case Management (EH-CM) solution, built on Cardinality's low-code EmpowerPlatform, is designed to centralize care management, streamline provider oversight, and support incident and complaint processes. The project began in September 2024 and is being delivered through a structured, phased DDI (Design, Development, and Implementation) approach, with an anticipated go-live in August 2026.

Cardinality's Role in Project: Cardinality serves as the system integrator, product configurator, and implementation partner for WY DOH. Cardinality is responsible for configuring, deploying, and supporting the EmpowerHealth Case Management solution, ensuring alignment with program requirements, federal and state compliance standards, and WY DOH's enterprise environment (WINGS).

Cardinality's Responsibilities:

- Configure and implement the EmpowerHealth Case Management (EH-CM) solution for CCMS.
- Automate care and case management processes including waiver enrollment, waitlist management, case stratification, and care planning.
- Streamline provider lifecycle management, including enrollment, licensure, certification, recertification, and compliance monitoring.
- Ensure integration with WINGS and other enterprise systems.
- Maintain compliance, audit trail capabilities, and role-based security controls.
- Deliver advanced analytics and reporting to improve insights, compliance, and decision-making.
- Provide continuous enhancements to meet evolving care standards and regulatory requirements.

Cardinality's Accomplishments:

- Successfully completed the Initiate Phase (Nov 2024), establishing the project foundation and governance structure.
- Completed the Discover Phase (Jan 2025), finalizing requirements and solution design with WY DOH and WINGS project teams.
- Executed 7 sprints by September 2025
- Established a collaborative working model with WY DOH and WINGS teams to ensure CCMS integration within the state's enterprise environment.
- Positioned the project on track for the August 2026 go-live, with milestones consistently achieved to date.

How the Project Was Managed: The project is being managed using a structured, phased approach aligned with DDI methodology. Cardinality follows Hybrid Agile Scrum practices, delivering work in incremental sprints while ensuring compliance with state-driven governance milestones. Key project management practices include:

- Collaborative Requirement Validation sessions with WY DOH and WINGS teams.

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- Sprint-based configuration and testing cycles, ensuring continuous validation of deliverables.
- Strong focus on risk management, compliance, and alignment with federal and state requirements.
- Clear project governance and reporting, with milestones tracked and closed on schedule.
- Commitment to continuous improvement, incorporating feedback and adapting to evolving HCBS program needs.

Reference 2:

Entity Name: West Virginia Department of Human Services	
Contract Title: Child Welfare Mobile Communication Software	
Client Address	350 Capitol St, Charleston, WV 25301
Client Contact Details	Name: Brandon Lewis Title: Chief of Technology and Information Systems, Office of Cabinet Secretary WV Department of Human Services Phone Number: 304-549-9414 Email Address: brandon.s.lewis@wv.gov
Contract Amount	$4.8 million
Contract Effective Dates	June 2025 - May 2030

Brief Contract Description

Project Description: The goal of this project is to improve communication and collaboration among the interested parties involved in the welfare of children to help enhance the State's foster care system. With this, the Agency aims to create a new external-facing portal that includes bidirectional data integration with the PATH system to improve the communication experience for all parties involved in a foster child's case, including but not limited to caseworkers, foster parents, biological parents or guardians, CPAs, Socially Necessary Services (SNS) providers, and Multidisciplinary Team (MDT) members.

Cardinality's Role in Project: Cardinality is the Prime contractor on this project and is leading the implementation of the communication software by configuring the Cardinality's EmpowerFamily Foster Care system to meet the needs of WV DoHS.

Cardinality's Responsibilities: Cardinality is leading key aspects of this project, including project management, requirements gathering and validation, configuration and customization, data modeling

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and conversion, system integration, testing, and training during the DDI phase. After go-live, Cardinality is also responsible for the maintenance and operations of the modernized communication software.

Cardinality's Accomplishments: Cardinality successfully met the legislatively mandated Phase 1 go-live in September by implementing required functionalities and completing all testing in under three months from kick-off. Two counties have already been onboarded as initial users, with the remaining counties scheduled for onboarding over the next few weeks to achieve statewide adoption by the end of September. Work is also underway on additional functionalities, with Phase 2 planned for go-live in February 2026.

How the Project Was Managed: Cardinality managed this project in close partnership with the client's selected PMO vendor, fostering a collaborative and transparent approach. We applied a Hybrid-Agile project management methodology that balanced speed with governance enabling rapid implementation within tight timelines while maintaining required controls, quality reviews, and compliance checkpoints. This approach also allowed for iterative feedback from agency stakeholders, ensuring the solution aligned with both functional needs and policy requirements.

Reference 3:

Entity Name: Georgia Department of Human Services	
Contract Title: Foster Care Provider Management Solution	
Client Address	47 Trinity Ave. S.W. City: Atlanta State: GA Zip Code: 30334
Client Contact Details	Name: Sriram Subramaniam Title: Assistant Deputy Commissioner Phone Number: 404-788-1144 Email Address: Sriram.Subramaniam@dhs.ga.gov
Contract Amount	$4.1 million
Contract Effective Dates	Jun 2023 – Jun 2028
Brief Contract Description	

Project Description: The Georgia Department of Human Services (DHS) partnered with Cardinality to modernize its foster care provider management processes by implementing the EmpowerFamily Child Welfare Foster Care System and the Georgia Communicare platform. The goal was to deliver a

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secure, configurable, low-code solution with user-friendly self-service portals and mobile access, enabling real-time communication, collaboration, and data sharing among DHS case managers, CASA volunteers, foster parents, biological parents, special attorney generals, and other stakeholders. This modernization aimed to strengthen provider oversight, improve information flow, and enhance child safety and family well-being outcomes statewide.

Cardinality's Role in Project: Cardinality served as the prime solution provider and system integrator for Georgia DHS. We delivered the EF-CW solution and Georgia Communicare, designed secure role-based workflows, built intuitive web and mobile portals for multiple user groups, and managed the full statewide deployment.

Cardinality's Responsibilities: Cardinality's responsibilities included deploying the Foster Care Provider Management System and self-service portal; tailoring functionality for diverse user types, including CASA volunteers, biological parents, foster parents, and special attorney generals; designing and developing the Georgia Communicare web and mobile app for real-time, secure collaboration; configuring mobile-friendly, role-based access for DHS staff and external users; migrating necessary data; supporting onboarding and training; providing comprehensive UAT assistance; and delivering post-go-live stabilization, contributing to successful adoption.

Cardinality's Accomplishments: Our key accomplishments include completing phase one implementation in just three months and statewide rollout of the mobile app within the next five months. As of September 2024, the system supports more than 6,500 external users including CASA volunteers, foster parents, and biological parents and over 2,100 Georgia DHS caseworkers. The solution has improved provider management, strengthened communication, and enabled secure, mobile-enabled access for field users, ultimately enhancing safety and service outcomes for children and families across Georgia.

How the Project Was Managed: Cardinality managed the project with a hands-on, user-centered approach that focused on real-time feedback, prototype reviews, and direct involvement of end-users such as CASA volunteers and foster parents. We structured releases in waves to deliver high-priority features quickly, while open lines of communication with DHS leaders enabled rapid decisions on configurations and enhancements. Our project governance included clear checkpoints, user adoption tracking, and strong post-launch support.

5.1.3. Proposed Data Migration Approach from Existing WVBOM Database to New System (RFP Section 4.3.1.3)

Vendor should propose a strategy to migrate data between the Board's legacy database and the proposed solution.

Our proposed **Cardycares Provider Management (CC-PM)** solution is designed to support the migration of WVBOM's legacy licensure, credentialing, and regulatory data enabling continuity, usability, and data integrity. With extensive experience managing complex data transitions for public

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sector agencies, Cardinality is well-positioned to deliver a reliable, efficient, and validated migration process. The migration effort will follow a structured plan, with robust data mapping and quality assurance practices tailored to meet WVBOM's operational requirements and compliance priorities.

The CC-PM solution implementation involves migrating data from the West Virginia Board of Medicine's existing systems including licensure, complaints, renewals, and document repositories to support a smooth transition. We are committed to migrate (transform, convert, transfer) records and data from the current legacy databases, SQL tables, and any license-related historical documents into the new CC-PM solution. A successful operational transition depends on accurately and completely migrating these records, data, and documents to enable immediate use by WVBOM staff and administrators.

The process includes developing detailed data migration specifications, analyzing and designing conversions, addressing legacy data challenges, and managing data complexity and quality issues. We will restructure the data as needed so it integrates effectively into the CC-PM solution. Our team will work closely with WVBOM, designated stakeholders, and the Project Manager to confirm that all existing data sources databases, tables, files, and scanned documents are mapped accurately and transitioned securely into the new system.

Since the migration process is highly involved and requires extensive analysis of legacy data systems, a comprehensive **Data Migration Plan** will detail the scope, process, and validation/testing approach. Mapping legacy attributes to the new system will be documented in a **Data Mapping Document**. Reports on migration quality will be provided after each migration cycle, addressing data profiling, cleansing, and de-duplication needs. Specific datasets such as license records, facility inspections, complaint histories, enforcement actions, and user/user role tables will be migrated.

Figure 45 below depicts the data migration methodology:

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Data Migration Lifecycle

Figure 45: Data Migration Lifecycle

1. **System Assessment:** In line with our mission-driven approach, Cardinality's data migration strategy for the WVBOM Medical Licensure / Records Database Maintenance System begins with a comprehensive assessment of the Board's legacy systems and related data sources. The primary goal is to fully understand the structure, schema, data volumes, and relationships across these systems in order to design an effective migration plan that supports data integrity and availability in the new CardyCares Provider Management (CC-PM) solution.

With deep experience in similar public sector modernization efforts, we understand the unique challenges of historical licensing, renewal, and disciplinary data. Our thorough assessment enables all legacy data to be accurately captured, cleaned, transformed (as needed), and prepared for migration, prioritizing consistency and completeness to fully support the mission of WVBOM.

Our migration plan includes real-time synchronization of data between the legacy system and the new CC-PM solution where feasible. Using industry-standard Change Data Capture (CDC) capabilities, we will validate that any changes made in the legacy system during the migration window are accurately reflected in the new platform. This approach reduces the risk of data loss or discrepancies and maintains data alignment across both systems.

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We will also implement a dual-running strategy where both the current and new systems operate concurrently during the cutover phase. This minimizes the chance of operational disruptions and allows for ongoing data validation and correction.

Approach:

- **Legacy Data Inventory:** We will work collaboratively with WVBOM staff and any third-party partners to inventory and map all relevant data elements, including licenses, inspection records, complaints, and enforcement data.
- **Data Segmentation:** Data segments (e.g., active vs. inactive licenses, closed vs. open cases) will be identified and prioritized for staged migration.
- **Interfacing Options:** We will assess existing system interfaces, batch jobs, and data extracts to determine the most effective data extraction and transfer approach whether via direct ETL processes, secure file-based transfer, or APIs.
- **Phased Migration Strategy:** Based on the system assessment, we will develop a phased migration approach that allows both systems to operate concurrently during transition, minimizing risks associated with final cutover.

Throughout the assessment and planning stages, we will work closely with WVBOM team members to validate field-level mappings, confirm legacy data requirements, and coordinate any conversion activities. If any external vendors currently manage WVBOM's legacy licensing system, they will be engaged to share insights and documentation to help make sure the migration is accurate, secure, and complete. We assume that relevant system documentation will be made available by WVBOM.

2. **Data Quality Assessment:** Maintaining high-quality, accurate data is critical for the success of the WVBOM Medical Licensure / Records Database Maintenance System implementation. We will perform a thorough data quality assessment to identify any inconsistencies, duplicates, or missing data that could affect the integrity of the migrated datasets. To facilitate a smooth transition of data, our data migration process will have a staging area between the existing databases and the new CardyCares Provider Management (CC-PM) solution.

The following diagram (**Figure 46**) outlines the key processes involved in maintaining data quality during migration, including data profiling, cleansing, standardization, and consolidation. These steps are crucial to enabling the migrated data to be accurate, consistent, and ready for operational use in the CC-PM solution.
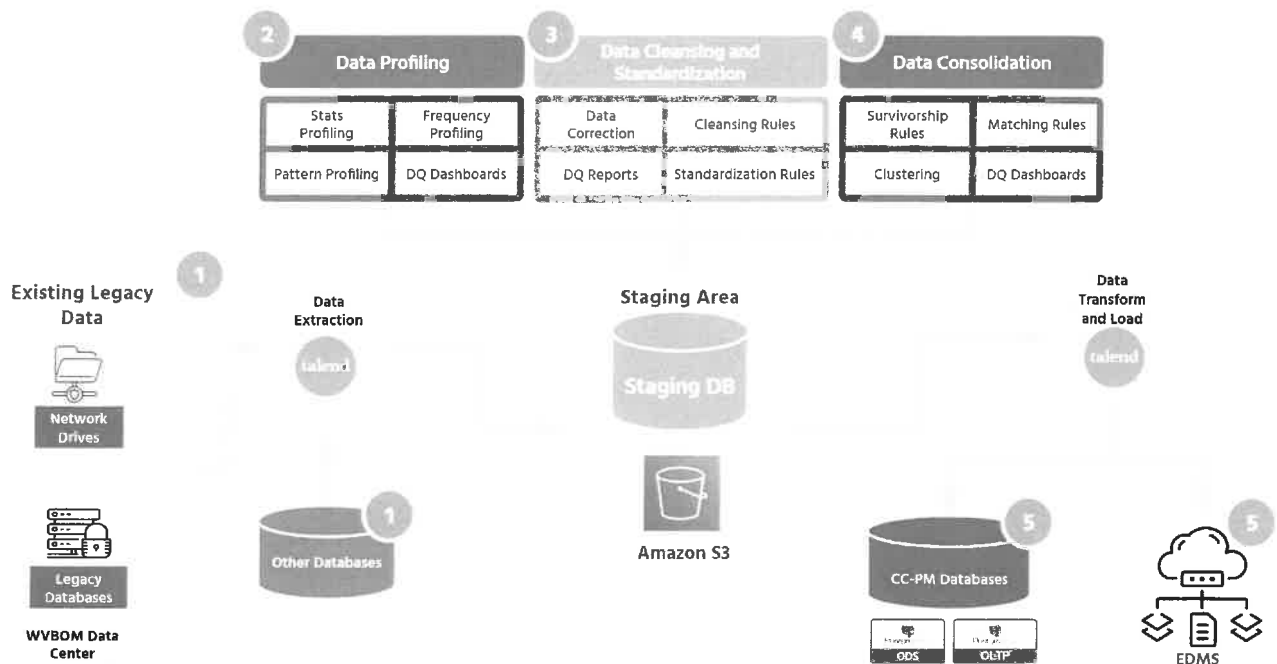
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Figure 46: Data Profiling, Cleansing, and Consolidation Workflow

Our pre-conversion data cleansing strategy is designed to enhance the quality of the data being migrated. Before migration, we will conduct rigorous data profiling using AWS Glue's built-in data cataloging, sharing, and transformation capabilities, combined with automated connectors, to address inconsistencies, duplicates, and errors in the data. This process will help make sure that all data entering the CC-PM solution with its integrated Records Management module is accurate and reliable.

Approach:

- **Data Cleansing:** Before migration, data cleansing rules will be defined to address issues such as duplicate records or incomplete entries.
- **Master Data Prioritization:** Master data sets will be prioritized for the first phase of migration to establish a reliable foundation for subsequent data processing.
- **Validation and Standardization:** We will apply data validation and standardization rules using **AWS Glue DataBrew**, **AWS Glue ETL jobs**, and conditional logic, enabling both visual and programmatic rule definition. For more complex or externalized rule management, our solution can integrate **AWS Lambda** functions or **Amazon EMR** to implement advanced business logic within the data pipeline.

The data strategy and solution will be adaptable, influenced by the architecture of both the legacy applications and the new CC-PM solution. This flexibility allows us to adjust the data quality assessment processes based on the unique requirements and constraints of each system so that the migration strategy is both effective and aligned with the overall deployment strategy.

3. **Design, Data Mapping, and Transformation:** The design phase will focus on mapping data elements from existing legacy licensing systems, files/documents, Excel sheets, CSV files, PDF documents, images, and other identified sources to the corresponding fields within the

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CardyCares Provider Management (CC-PM) solution so that data transformation aligns with CC-PM's data structures and WVBOM's regulatory requirements.

Approach:

- **Mapping Data Elements:** Each data element will be mapped to the corresponding CC-PM data model. All documents related to licenses, inspections, complaints, and disciplinary actions will be mapped to appropriate license types and workflows. We will enable all critical data, including sensitive information, to be accurately transformed and securely transferred.
- **ETL Process Design:** The ETL (Extract, Transform, Load) processes will be designed to handle large data volumes efficiently, avoiding performance bottlenecks such as long-running queries or full table scans. This includes data stored in spreadsheets and other formats such as CSV files.
- **API Utilization:** Where feasible, APIs will be used for real-time data exchanges during migration, facilitating low latency and high performance. AWS Lambda functions, along with tools in AWS Glue, will be employed for data transformation and loading tasks.

Where possible, the migration strategy will leverage the data warehousing solution (AWS Glue ETL jobs) for real-time retrieval and transformation of legacy data. This approach reduces the need for extensive data conversion, allowing data to be presented within the CC-PM solution directly from the data warehouse when feasible. When direct conversion is necessary, we will work with WVBOM to determine the extent of the required data transformation.

All existing license records, inspection histories, complaints, disciplinary actions, and related historical documents will be migrated to the newly configured CC-PM solution. Transformation rules will be defined and applied as needed to accurately categorize and link all licensee-level and entity-level data to the appropriate WVBOM workflows and user roles. Documents and attachments will be indexed and archived in the document management system, linking to the right records for efficient search and retrieval.

4. **Test Planning:** Before the final data migration, comprehensive testing will be conducted to validate the accuracy and completeness of the migrated data so that the CardyCares Provider Management (CC-PM) solution meets all functional requirements and that there are no disruptions to licensing, inspection, or regulatory service delivery.

Approach:

- **Test Data Identification:** We will work with WVBOM to identify appropriate test data sets across licenses, inspections, complaints, and disciplinary actions to conduct thorough validation.
- **Audit Balancing:** Audit balancing will involve comparing data counts between the legacy licensing systems, related files/documents, and the CC-PM solution to maintain consistency and data integrity.
- **Scenario Testing:** Migrated data will be used to test real-world scenarios, such as creating or updating license records, verifying renewal workflows, linking inspection reports and disciplinary actions, and confirming that all supporting documents are attached and accessible validating that the CC-PM solution functions as intended.

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Authorized WVBOM staff will be provided with access to a dedicated validation environment where they can review and validate the converted data. We will support the data validation effort by generating comparative reports and addressing any data quality issues identified during testing. This enables data migration to meet all WVBOM requirements before the final cutover.

5. **Data Extraction:** Data extraction is a critical step where data and supporting documents from WVBOM's legacy licensure, inspection, and investigation systems will be systematically extracted, pre-processed, and prepared for migration to the CardyCares Provider Management (CC-PM) solution.

Approach:

- **Extraction Techniques:** Based on the data structures identified during the assessment phase, data and documents from WVBOM's current systems will be extracted using a combination of proven ETL tools and custom extraction scripts.
- **Landing Zones:** Extracted data will be securely stored in staging areas (such as AWS S3 buckets or staging database tables), where initial transformations and validations will be applied before loading it into the CC-PM solution database and integrated Document Management System.

Throughout the extraction process, we will work closely with WVBOM staff and any legacy system vendors to identify specific data elements that need to be extracted and converted. If certain legacy data elements cannot be directly converted, we will collaborate to identify acceptable alternatives or default values that meet WVBOM 's business and regulatory requirements. Relevant supporting documents will also be linked to appropriate license, inspection, and complaint records.

6. **Data Transformation and Loading:** The data transformation and loading stage focuses on applying final conversions to extracted licensing, complaint, disciplinary, and credentialing data before loading it into the CardyCares Provider Management (CC-PM) solution's target database and integrated document storage components.

Approach:

- **Staging and Target Loading:** Extracted data will first undergo structured transformations in the staging environment to align with WVBOM's configured data model, followed by final validation and loading into the CC-PM solution's secure production database. Documents will be staged in secure cloud storage (e.g., AWS S3) before being organized, indexed, and moved to the CC-PM solution's integrated document management module for long-term management and streamlined retrieval.
- **Batch and Real-Time Integration:** Depending on the data type and WVBOM's operational needs, Cardinality will use a combination of batch processing and real-time API integration to maintain accurate, timely migration and synchronization of data.
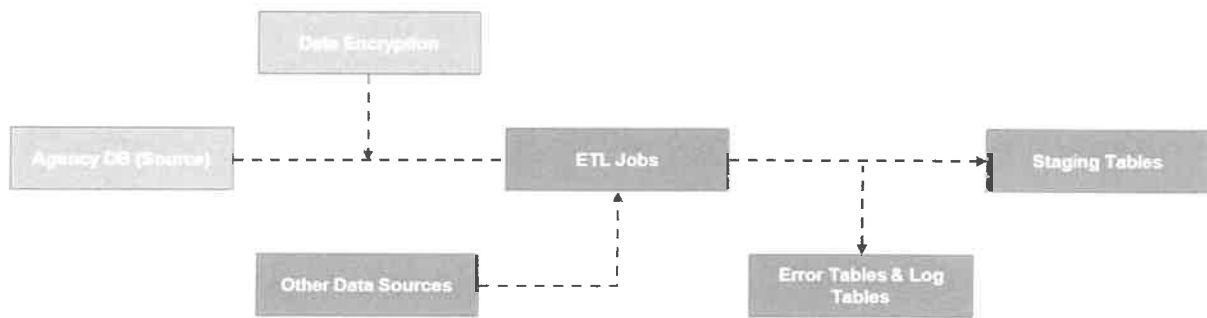
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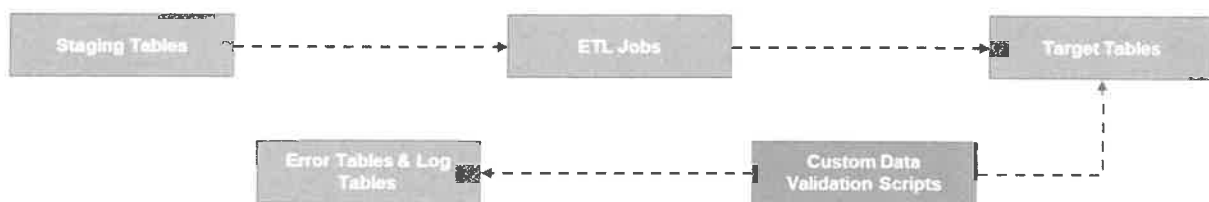Cardinality

Figure 47: Source to Staging process

Figure 48: Staging to Target process

7. **Validation and Verification:** Validation and verification activities will confirm that all migrated licensing, inspection, investigation, and disciplinary records are accurate, complete, and fully functional within the new CardyCares Provider Management (CC-PM) solution.

Approach:

- **Audit Balancing:** We will apply audit balancing rules defined during the test planning phase to verify record counts, validate field-level data accuracy, and maintain integrity across related entities and linked documents. This includes checking that licensing data, inspection reports, and complaint case files are intact and properly linked in the new system.
- **Non-Production Testing:** Validation tests will first be performed in a dedicated non-production environment using real legacy data sets. After successful verification, the migration process will be repeated in the production environment to confirm accuracy at cutover.

We will generate comparative reports for all converted data and related documents, allowing WVBOM staff to confirm successful migration. Any data quality issues discovered during validation will be promptly resolved in coordination with WVBOM, making sure the final data set is accurate, reliable, and ready for use. Pre- and post-migration record counts will be compared and samples validated for completeness.

8. **Post-Migration and Data Governance Activities:** Following migration, Cardinality will help WVBOM establish clear processes to sustain long-term data quality and compliance within the CC-PM solution.

Approach:

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- **Data Governance Processes:** We will implement governance protocols that include policies for ongoing data maintenance, periodic audits, integrity monitoring, and backups. Tools such as AWS CloudWatch or similar cloud-native services will support continuous oversight of system health and data integrity.
- **Documentation and Training:** Detailed documentation will be delivered outlining the migration process, data structures, mapping, and governance procedures. Cardinality will also train designated WVBOM staff to manage and maintain the migrated data, making sure that the system continues to operate with high data quality standards over time.

5.1.4. Additional Vendor Capabilities Including Web Design, Hosting, and Domain Services (RFP Section 4.3.1.4)

> The Vendor should provide information in regard to any other services they provide including, but not limited to, website creation, hosting, and domain forwarding.

In addition to delivering the core CardyCares Provider Management (CC-PM) solution, Cardinality offers a comprehensive suite of additional services designed to support the operational, regulatory, public-facing, and technical needs of licensing and regulatory boards like the West Virginia Board of Medicine (WVBOM). These services can be provided alongside system implementation or added incrementally, depending on WVBOM's evolving priorities.

1. Website Creation, Hosting, and Domain Forwarding

- **Website Design and Development:** Cardinality builds modern, ADA Section 508 and WCAG 2.1 Level AA-compliant websites that provide an efficient and accessible user experience. We can create or redesign WVBOM's public-facing site to improve navigation, content access, license lookup, and transparency. Sites are mobile-responsive and optimized for performance and accessibility.
- **Hosting Services:** We offer secure, scalable cloud hosting environments, including AWS GovCloud and Microsoft Azure Government. Hosting includes load balancing, backup and disaster recovery, performance monitoring, and ongoing patching and optimization.
- **Domain Management:** Cardinality manages full DNS and domain services, including domain registration, SSL certificate management, subdomain creation, and forwarding of legacy or alternate domain URLs to the updated website or portals.

2. Outreach and Communication Tools

- **Mass Emailing and Notification Engines:** Our solution supports built-in notification systems that allow WVBOM to send renewal alerts, policy changes, board updates, and educational reminders through SMS, email, and in-system notifications. These can be scheduled or triggered by system events.
- **Secure Message Center:** Within user portals, licensees can receive official correspondence, submit inquiries, and track responses, creating a central hub for secure communications.
- **Event and Exam Scheduling:** Cardinality can also provide modules to support registration and communication around continuing education events, board meetings, or in-person exams

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3. **Self-Service Portals**

- **Role-Based Access for Stakeholders**: We provide separate secure portals for applicants, licensees, board members, administrative staff, and the general public, tailored to each group's specific tasks and permissions.
- **Document Uploads and E-Signatures**: All portals include features for uploading required documents, completing checklists, and capturing legally binding electronic signatures.
- **Status Tracking and History**: Users can view the status of submitted applications, renewals, complaints, or requests, along with historical activity.

4. **Knowledge and Learning Management**

- **Knowledge Management System (KMS)**: Cardinality provides centralized access to policies, procedural documents, internal how-to guides, FAQ articles, and historical decisions supporting institutional knowledge retention and operational consistency.
- **Integrated Learning Management System (LMS)**: Enables onboarding and continuous training for staff and stakeholders. This includes SCORM-compliant training modules, testing, progress tracking, and certification issuance.

5. **Advanced Analytics and Reporting**

- **Real-Time Dashboards**: Board administrators and leadership can monitor key performance indicators, such as processing times, complaint trends, licensing volume, and compliance rates.
- **Standard and Custom Reports**: Cardinality provides out-of-the-box regulatory reports as well as custom report builders that allow staff to generate ad hoc or scheduled reports as needed, with export to PDF, Excel, or CSV.
- **Audit Logs**: Comprehensive audit tracking supports internal reviews and external audits by capturing all user interactions, changes, and decisions.

6. **Security and Compliance Services**

- **Penetration Testing and Vulnerability Assessments**: Cardinality supports annual or periodic third-party penetration testing, and coordinates remediation of findings in collaboration with WVBOM or their designated security team.
- **Encryption and Access Controls**: All data is encrypted at rest and in transit. We use fine-grained Role-Based Access Controls (RBAC) to control user access to forms, workflows, and data based on organizational roles.
- **Privacy and Compliance Documentation**: We provide documentation and support related to HIPAA, PII protections, and state-specific cybersecurity or data governance requirements.

7. **System Integration Services**

- **Third-Party System Integration**: Our platform is built with open APIs and pre-integrated connectors that support exchange with identity management tools (SSO), payment processors, regulatory databases (e.g., FSMB), WV State Treasurer's eGov platform and reporting tools.
- **Document Management Integration**: Integration with systems like FileDirector or other agency-standard DMS platforms can be included to support document versioning, retention, tagging, and secure retrieval.

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- **Payment Gateway Integration**: Cardinality supports real-time integration with various payment providers to process application, renewal, and disciplinary fees securely.

5.2. Mandatory Qualification/Experience Requirements (RFP Section 4.3.2)

5.2.1. Prior Licensing Board Engagements with Successful Data Migration and Solution Delivery (Past 3 Years)

> The Vendor must have successfully migrated data and supplied and supported a licensing database substantially similar to the specifications herein to another professional licensing board of a state or territory of the United States within the last three (3) years. Vendor must provide documentation verifying compliance upon request. (RFP Section 4.3.2.1)

Cardinality has successfully delivered regulatory and licensing platforms for multiple government agencies across the United States. Each implementation included large-scale data migration, configurable licensing databases, and sustained operational support, demonstrating direct alignment with the West Virginia Board of Medicine's expectations.

Project 1: Maryland Department of Human Services (CJAMS Project)
Contract Title: Child Juvenile and Adult Management System (CJAMS)

Data Records Migrated: ~12 million

Platform Type: CCWIS-compliant licensing and case management system

Key Activities:

- Migrated 12 million records from legacy Maryland Department of Health systems.
- Designed and delivered a configurable, low-code system with modules for licensing, provider management, and regulatory oversight as part of the Comprehensive Child Welfare implementation
- Implemented secure access controls, audit trails, and a document management layer to support licensure workflows.

Relevance to WVBOM:

1. Licensing and Credentialing Parallels

Maryland DHS is responsible for overseeing and approving service providers across multiple programs including foster care, adult protective services, and juvenile justice. As part of CJAMS, Cardinality developed a **provider registry** and **credentialing module** that managed licensure eligibility, provider qualifications, renewal tracking, and compliance reporting mirroring how WVBOM tracks physician and healthcare provider licenses, renewals, and continuing education.

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The CJAMS system supported workflows such as:

- Initial application intake
- Background verification and eligibility screening
- Approval and renewal cycles
- License suspension or revocation based on investigative findings

These same workflows can be mapped to **WVBOM's licensing lifecycle** for physicians, physician assistants, and other healthcare professionals.

2. Inspection, Investigation, and Disciplinary Functions

In addition to licensure, CJAMS enabled DHS staff to conduct and document field inspections, investigations, and follow-ups related to maltreatment allegations or regulatory violations functions that are **highly comparable to WVBOM's disciplinary and compliance review processes**.

Key features included:

- Configurable investigative workflows
- Audit trails of actions taken
- Secure attachment of supporting documents and evidence
- Role-based access controls to protect sensitive case information
- System-generated alerts and compliance flags

WVBOM's disciplinary review processes (e.g., tracking complaints, investigations, consent orders, and revocations) would benefit from these same foundational capabilities, which have been **tested and validated in a live, high-volume regulatory environment**.

3. Data Migration and System Consolidation Experience

CJAMS consolidated data from multiple legacy systems across different divisions within DHS. Similarly, WVBOM is seeking to unify its licensing and disciplinary data possibly from siloed systems or disconnected processes into a **modern, integrated platform**.

Cardinality migrated:

- 12 million records
- Data spanning more than a decade
- Multiple data formats and legacy database schemas

This migration effort required extensive mapping, cleansing, and transformation logic skills directly applicable to **WVBOM's needs for a validated and accurate migration** from its current systems to the proposed CC-PM solution.

4. Security, Role-Based Access, and Auditability

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WVBOM, like Maryland DHS, must comply with data privacy standards such as HIPAA and safeguard personally identifiable information (PII). CJAMS features:

- Strict user-role definitions (e.g., investigators vs. case managers vs. leadership)
- Comprehensive audit logs
- Secure login protocols and access control layers

These same safeguards are integrated into Cardinality's CardyCares Provider Management (CC-PM) solution proposed for WVBOM, offering equivalent security governance and traceability for licensure and disciplinary operations.

5. Configurable Workflows and Modular Design

WVBOM's operational structure may evolve as licensing rules or disciplinary review procedures change. CJAMS was delivered using Cardinality's **low-code platform**, which allowed Maryland DHS to:

- Configure workflows without custom code
- Add or modify licensing forms and checklists
- Route tasks based on user role, location, or case status

This flexibility would empower WVBOM to independently manage future updates to its licensure processes, board reviews, and correspondence handling.

Outcome:

- Platform now supports ~5,000 caseworkers and administrators.
- Integrated with 18 external systems.
- Achieved high system adoption and stability post-migration.

Project 2: Georgia Department of Human Services – Foster Care Provider Management System

Contract Title: EmpowerFamily Child Welfare System / Georgia Communicare

Data Records Migrated: Significant provider/licensure records (ongoing)

Platform Type: Low-code, cloud-based regulatory and licensing platform

Key Activities:

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- Deployed a new statewide provider management system tailored for multiple user types (e.g., foster parents, legal representatives, volunteers).
- Designed secure, mobile-enabled portals with structured workflows for license application, status tracking, compliance reporting, and document submission.
- Migrated historical licensing and provider compliance data from prior databases into the new solution using structured transformation and reconciliation processes.

Relevance to WVBOM:

1. Licensing Lifecycle and Provider Oversight

Cardinality's Georgia DHS solution facilitates the full lifecycle of foster care provider oversight, including intake, credentialing, ongoing status updates, and renewal management. These functions are foundational to professional licensing bodies like WVBOM, which must handle a similar range of regulatory activities for physicians and allied professionals. The system's ability to standardize and track approvals, background checks, and certifications provides a strong match to WVBOM's core responsibilities.

- Supports complete provider lifecycle: intake, credentialing, monitoring, and renewals
- Built-in workflows for background checks and eligibility determinations
- Role-based access for reviewers, supervisors, and administrators

2. Investigations and Complaint Management

The solution includes complaint intake and resolution workflows that route allegations of misconduct or compliance violations to appropriate investigators within the agency. These workflows are configurable, support documentation and evidence upload, and enforce escalation rules and case tracking. WVBOM can benefit from these pre-established structures for managing disciplinary cases against licensees.

- Workflow-based complaint intake and triage
- Case tracking with escalation logic and resolution workflows
- Role-specific dashboards for investigators and case managers

3. System Consolidation

We delivered mobile-responsive portals tailored for diverse user groups including DHS staff, foster parents, legal representatives, and CASA volunteers. These portals included secure logins, accessible forms, and guided workflows. WVBOM's user groups (e.g., physicians, board members, staff) will benefit from the same architecture, which supports differentiated user journeys and accessibility standards (WCAG 2.1 Level AA).

- Accessible and mobile-friendly interfaces for all user roles
- Configurable portal experience for internal and external users
- Compliant with WCAG 2.1 Level AA and Section 508

4. Secure, Configurable, and Scalable Framework

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This system was built using Cardinality's low-code platform, enabling rapid configuration of workflows, data fields, and user roles without extensive custom coding. Deployed on a secure cloud environment with strict access controls, the solution provides robust audit logging and supports SSO. WVBOM can leverage this same architecture to safeguard medical licensee data while maintaining flexibility for future updates.

- Low-code configuration of forms, rules, and workflows
- Cloud-native deployment with encryption and access controls
- Full audit logging and identity management features

Outcome:

- Phase one completed in under 3 months; app rolled out statewide in under 8 months.
- Supports over 6,500 external users and 2,100 caseworkers.
- Strong adoption due to usability, real-time communication, and secure role-based access.

Project 3: Indiana Department of Child Services (IN DCS) – CCWIS Eligibility and Finance Modules

Contract Title: Comprehensive Child Welfare Information System (CCWIS)

Data Records Migrated: Multiple eligibility and financial datasets

Platform Type: Eligibility and Finance Licensing Support Modules

Key Activities:

- Designed and implemented Eligibility and Finance modules under the CCWIS mandate, including licensing and oversight for financial eligibility and provider payments.
- Migrated structured financial and eligibility data from legacy systems to a modern, multi-cloud environment.
- Integrated new modules with existing Salesforce-based systems and AWS-hosted services.

Relevance to WVBOM:

1. Credential Validation and Documentation Oversight

The CCWIS Eligibility module designed for IN DCS required complex logic to validate an individual's eligibility for services based on identity, documentation, and financial history mirroring the verification and documentation processes required by WVBOM for licensing professionals. The system

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automates validations and enforces rules tied to federal and state compliance, just as WVBOM must do when verifying credentials, license renewals, or disciplinary records.

- Rules-based validation of submitted credentials and documents
- Automated workflows for eligibility determination akin to license validation
- Document tracking with audit trails supporting regulated oversight

2. Data Integration and Interoperability

This project involved deep system interoperability across IN DCS systems and third-party entities such as SSA and Child Support agencies. The architecture supports secure data exchange, standardized APIs, and alignment with federal CCWIS guidelines. For WVBOM, which requires integration with systems like NABP, background check providers, and payment processors, the same interoperability standards are readily transferrable.

- Use of APIs and secure batch file exchange for external integrations
- Aligned with federal interoperability standards (similar to NABP/SAM.gov needs)
- Supports bidirectional data exchange and reconciliation

3. Modular System Design and Phased Rollout

Cardinality developed this solution using a modular, cloud-native architecture that allowed phased releases starting with Eligibility and expanding to Finance. Each module was configurable and deployed with minimal disruption to IN DCS operations. WVBOM benefits from the same flexible deployment model, allowing the Licensing, Disciplinary, and Reporting modules to be delivered and adopted incrementally.

- Modular components tailored to department-specific functions
- Phased implementation approach reduces risk and improves adoption
- low-code configurability reduces time-to-deploy for each module

4. Data Migration and Change Management

Cardinality's approach to migrating eligibility and financial records in Indiana included structured ETL cycles, validation scripts, and real-time synchronization using Change Data Capture (CDC) principles. This process aligns with WVBOM's requirement to migrate licensing, complaint, and historical data from multiple legacy sources into a unified platform without data loss or functional downtime.

- Iterative migration cycles with transformation mapping and reconciliation
- CDC-based synchronization to reduce cutover risk
- Efficient transition with side-by-side system operation during go-live

5. Governance, Auditability, and Compliance

Given the sensitivity of financial and eligibility data, this project demanded robust audit logging, access controls, and system governance. These controls mirror the compliance obligations WVBOM

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faces under HIPAA, PII, and state licensing laws. Cardinality embedded a governance structure and role-based access logic into the platform to uphold transparency and traceability across all interactions.

- Role-based access controls and least-privilege enforcement
- Full audit logging of user actions, data updates, and approvals
- Configurable user roles aligned to operational and compliance needs

Outcome:

- Successfully progressed to the UAT for Eligibility module.
- Provided operational readiness for fiscal teams and eligibility specialists.
- Built groundwork for a compliant, extensible CCWIS environment.

Cardinality's experience confirms our ability to meet WVBOM's needs for:

- A secure, configurable licensing database tailored to medical professionals
- Complete and validated data migration from legacy SQL and document systems
- Compliance with regulatory mandates, including HIPAA and audit trail requirements
- Ongoing system support and enhancements

We welcome the opportunity to provide verification documentation or reference contacts upon request.

5.2.2. Ongoing Maintenance and Support Experience for State Licensing Systems

> The Vendor must have at least three (3) years' experience in providing ongoing maintenance and support for a licensing database substantially similar to the specifications herein to another professional licensing board of a state or territory of the United States. Vendor must provide documentation verifying compliance upon request. (RFP Section 4.3.2.2)

Vendor Experience in Maintenance & Operations (M&O) Support

Cardinality has extensive experience providing ongoing maintenance and support services for mission-critical systems in the public sector. While the Georgia DHS Communicare system went live in October 2023, our team has been continuously delivering M&O services since launch, with a scope and rigor substantially similar to licensing database environments.

1) Georgia DHS Communicare System (October 2023 – Present)

- **Case Assignments & Volunteer Support:** Enables CASA volunteers to receive case assignments, manage case documents, and collaborate effectively.
- **Foster Parent Access:** Provides foster parents with secure access to child-related information, ensuring transparency and timely updates.
- **Case Management & Supervision:** Allows case managers and supervisors to manage caseloads, track progress, and oversee child welfare activities.

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- **Agency & Volunteer Access:** Grants agency staff and CASA volunteers role-based access to child-related information, supporting coordinated care.
- **Integration with State Systems:** Interfaces with the state's source-of-truth system to receive case and document data, ensuring consistency and compliance.

M&O Services Provided:

- **Level 2 & Level 3 Support:** Issues reported via JIRA, triaged and resolved by Cardinality.
- **Enhancements:** Medicaid card generation for children, mobile app development, and ongoing functional improvements.
- **Release Management:** Monthly maintenance releases; bi-monthly security & penetration testing (ImmuniWeb) and accessibility testing (JAWS, WAVE, AXE).
- **Notifications & Scheduling:** In-app, email, and SMS notifications; automated appointment reminders.
- **System Monitoring:** AWS-based performance monitoring with AWS Cloudwatch, AWS Cloudtrail, logs and alarms.

Alignment with Licensing Database Requirements

- **Comparable Scope:** The Communicare system manages sensitive, regulated data, supports role-based access, and meets compliance with federal/state standards similar to licensing databases.
- **Operational Rigor:** Continuous monitoring, accessibility compliance, and security testing mirror the requirements of professional licensing boards.
- **Documentation:** Cardinality can provide detailed records of maintenance releases, support tickets, and compliance testing upon request.

2) **West Virginia Foster Parent Communication Portal (September 2025 – Present)**

- **System Purpose:** Provides foster parents with a secure communication channel to access child-related information and interact with agency staff.
- **Case Management Support:** Enables case managers and supervisors to streamline communication and manage foster parent interactions.
- **M&O Services Provided:**
- **Level 2 & Level 3 Helpdesk Support:** Ongoing issue resolution and technical support for agency staff and foster parents.
- **Enhancements:**
    - Automation of case file processes to reduce manual effort and improve accuracy.
    - Streamlined user onboarding process for foster parents and agency staff.
- **Release Management:** Regular maintenance releases with functional updates and security checks.
- **Operational Monitoring:** Continuous performance oversight to establish system reliability and compliance.

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5.2.3. Authorized Reseller or Owner Status with Proven Ability to Support Proposed Solution

> The Vendor shall be an authorized reseller, owner, or explicitly authorized to transfer intellectual property, with documented experience supporting the ability to sell, service, and/or support the hardware or software proposed in this RFP. Vendor must provide documentation verifying compliance upon request. (RFP Section 4.3.2.3)

Corporate Background and Experience

Founded in 2017 to introduce digital modernization to the government, Elixir Lab USA Inc. (d/b/a Cardinality.ai) is an innovator for state governments with an emphasis on health and human services agencies. Cardinality is recognized as a leading GovTech company (2020-2025) and as the AWS State & Local Government Partner of the Year (2022). Additionally, Cardinality received the prestigious 'Rising Star' award at the 2024 SLEDIE awards, presented by e.Republic.

At Cardinality, we are dedicated to delivering data technology solutions that enable governments to achieve better outcomes. Our pre-built solutions are currently empowering over **5,000+ caseworkers across 15 government agencies, 9 states, and 12 healthcare and non-profit organizations,** helping to modernize their digital engagement with citizens and streamline operations for improved efficiency and effectiveness. Central to our operations is a committed team of over 200 professionals and subcontractors. This dedicated workforce is essential to our ability to innovate and deliver impactful solutions that improve public services and governance.

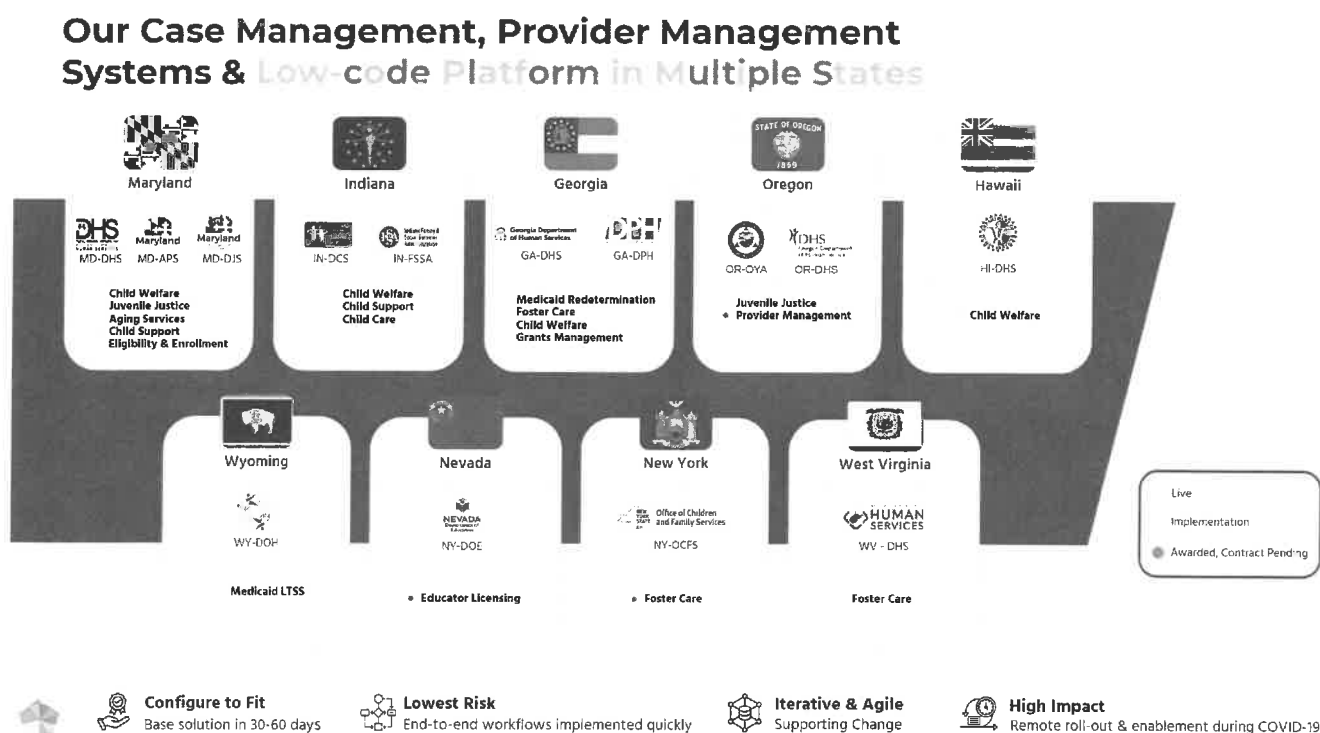The below **Figure 49** provides an overview of our clientele.

Figure 49: Cardinality's Clientele

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Cardinality offers a broad portfolio of SaaS-based business solutions across the HHS and Workforce industries, with expertise in Social Services & Grants, Family & Health, Claims and Collections, and Workforce & Jobs domains. Our portfolio of pre-built solutions is detailed in Figure **X** below.

Cardinality Offerings: Pre built Solutions

EmpowerFamily
Child Welfare
Child Support
Integrated Eligibility
Child Care & WIC
Aging Services

CardyCares
Medicaid
Long-Term Services & Supports
Mental Health & Addiction
Scheduling/Vaccine Admin
Revenue Cycle Management

EmpowerWork
Civic Engagement
Unemployment Insurance
Workforce Dev & Training
Work Recommendations
Early Fraud Detection

EmpowerSafety
Juvenile Justice
Law Enforcement
Records Management
Incident Response Management
Judicial Case Management

EmpowerValues
ASSURE   PROTECT   SECURE   ACTIVATE   IMPROVE

Figure 50: Cardinality Offerings: Pre-built Solutions

Cardinality is the **original developer, owner, and authorized intellectual property holder** of the **CardyCares Provider Management (CC-PM)** solution proposed for the West Virginia Board of Medicine (WVBOM). As the product owner, Cardinality maintains **full legal rights to license, configure, and support the software solution and its associated components**. No third-party intermediary is required for licensing, modifications, or product roadmap updates, which gives WVBOM direct access to decision-makers and solution experts.

Cardinality maintains **exclusive control over the source code, product architecture, and core design of CC-PM**, enabling us to provide immediate and in-depth support across configuration, security, integration, and performance aspects of the platform. We have a mature DevSecOps infrastructure, continuous integration and delivery pipelines, and a dedicated engineering team to address product enhancements and client-specific needs.

We have successfully licensed, supported, and scaled this platform across multiple U.S. state agencies for highly regulated domains, including:

- State professional and medical licensing boards
- Human services departments with regulated provider databases
- Child welfare systems requiring credential validation, secure documentation, and workflow enforcement

WVBOM-Specific Benefits of Cardinality's IP Ownership

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- **Direct engagement** with the solution team, including access to decision-makers, architects, and engineers
- **Faster turnaround** for enhancements, bug fixes, and security updates eliminating vendor escalation delays
- **Greater customization flexibility** to meet WVBOM-specific workflows and compliance frameworks
- **Cost-efficient support model** without unnecessary licensing fees or third-party markups
- **Futureproof platform architecture** that accommodates growth in licensing categories, portal users, and integration needs

Cardinality will provide documentation verifying our IP ownership and full authorization to sell, configure, and support the CC-PM platform upon request by WVBOM.

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6. Certification and Signature Page

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Printed Name and Title) __Anna Harper, Chief Administrative Officer__

(Address) __155 Gibbs St. 4th Floor, Rockville, MD 20850__
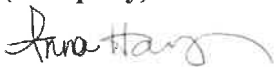
(Phone Number) / (Fax Number) (513) 907-1068
(email address) sales@cardyai.com

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; that I am authorized by the Vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on Vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.

Elixir Lab USA Inc. d/b/a Cardinality.ai
(Company)

(Signature of Authorized Representative)

Anna Harper, Chief Administrative Officer (17-Dec-2025)
(Printed Name and Title of Authorized Representative) (Date)
(513) 907-1068
(Phone Number) (Fax Number)
sales@cardyai.com
(Email Address)

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7. 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.

Elixir Lab USA Inc. (d/b/a) Cardinality.ai

(Company)

Anna Harper, Chief Administrative Officer

(Representative Name, Title)

(513) 907-1068

(Contact Phone/Fax Number)

17-Dec-2025

(Date)

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8.   Addendum Acknowledgement Form

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CRFP BOM26*01

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.

Addendum Numbers Received:
(Check the box next to each addendum received)

[X] Addendum No. 1	[ ] Addendum No. 6
[X] Addendum No. 2	[ ] Addendum No. 7
[X] Addendum No. 3	[ ] Addendum No. 8
[X] Addendum No. 4	[ ] Addendum No. 9
[X] Addendum No. 5	[ ] Addendum No. 10

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.

Elixir Lab USA Inc. (d/b/a) Cardinality.ai
Company

Kevin Jones

Authorized Signature

Dec 17, 2025
Date

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

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9. Exceptions & Clarifications

The table below lists exceptions or additions along with the rationale and the recommended alternative wording.

ATTACHME NT/SEC/PG. NO	Exception or Addition	Reason	PROPOSED VERBIAGE
General Terms and conditions – RFP Sec 28	Additional language	Cardinality requests this addition to clarify that no implied warranties apply beyond those expressly stated, thereby limiting potential liability for unintended assurances of quality or suitability for a particular purpose.	The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship except for the express warranties set forth in this agreement, contractor makes no other warranties, whether express or implied, including, without limitation, any implied warranties of merchantability or fitness for a particular purpose, except to the extent such warranties cannot be lawfully disclaimed. Vendor warranties extend solely to the state and not to any third party.
General Terms and conditions – RFP Sec 30	Additional language	The purpose of the clause is to protect the Vendor's confidential and proprietary information from being disclosed, used, or misused during the performance of the agreement and to clarify the confidentiality obligations of the State/Agency and to provide a legal framework for the protection of Vendor Confidential Information in alignment with applicable laws governing trade secrets, intellectual property, and business privacy.	**Vendor Confidential Information.** The State/Agency acknowledges that during the performance of this Agreement, it may be provided with or otherwise gain access to confidential and proprietary information, data, materials, and intellectual property owned or controlled by the Vendor (collectively, **"Vendor Confidential Information"** or **"Exempt Information"**). Such Vendor Confidential Information includes, but is not limited to, trade secrets, proprietary information or financial information, including any formulae, plan, pattern, process, tool, mechanism, compound, procedure, production data, or compilation of information which is not patented, which is known only to the Contractor, and which gives the Contractor an opportunity to obtain business advantage over competitors who do not know it or use it. The State agrees that it shall treat all such Vendor Confidential Information as strictly confidential and shall not disclose, distribute, or use it for any purpose other than as explicitly necessary for the performance of its obligations under this

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General Terms and conditions – RFP	Additional language	Cardinality requests the inclusion of an Intellectual Property (IP) clause to clarify the ownership and use of intellectual property developed, created, or conceived during the performance of the contract and also safeguarding the Vendor's rights to any intellectual property developed prior to or independent of the contract.	Agreement. The State shall not, directly or indirectly, use Vendor Confidential Information for any purpose other than as expressly permitted under this Agreement, and shall not reverse-engineer, decompile, or disassemble any proprietary materials provided by the Vendor.
			INTELLECTUAL PROPERTY. The Vendor acknowledges and agrees that any intellectual property developed, created, or conceived by the Vendor in the performance of this Contract, including but not limited to software, inventions, designs, documents, data, or other works, which are based on or derived from State-owned resources, funding, or materials, shall be considered the exclusive property of the State/Agency. The Vendor agrees to assign and hereby assigns all rights, title, and interest in such intellectual property to the State/Agency. **PREEXISTING INTELLECTUAL PROPERTY.** The Vendor retains all rights, title, and interest in any intellectual property that is owned or developed by the Vendor prior to the effective date of this Contract, or independently of the services provided under this Contract ("Preexisting IP"). The State acknowledges and agrees that the Vendor's Preexisting IP is and shall remain the sole property of the Vendor. The State shall not modify, distribute, or sublicense any Preexisting IP.

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General Terms and conditions – RFP	Additional language	Cardinality requests this addition to cap overall liability and exclude indirect or consequential damages, ensuring predictability of risk exposure.	**Limitation of Liability** (a) in no event will contractor, its suppliers, or subcontractors be liable in connection with this agreement or the services for any (i) consequential, indirect, exemplary, enhanced, incidental, special, or punitive damages; (ii) lost profits, loss of use or loss of anticipated savings or revenue (whether direct or indirect);(iii) damage to or loss of data; or (iv) loss of goodwill, reputation or other diminution in the value of the state's business, in each case whether or not foreseeable; and (b) to the greatest extent permitted by law and regardless of the legal or equitable theory, whether based on breach of contract, tort (including negligence), indemnity, warranty or otherwise, the total aggregate liability of the contractor, its suppliers and subcontractors will not exceed the charges paid under this agreement for the services that are the subject of the claim during the 12 months before the claim.
General Terms and conditions – RFP	Additional language	Force Majeure clause is being added to protect both parties from unforeseen events, clarifies expectations for handling these situations, and aims to prevent conflicts related to uncontrollable circumstances.	**FORCE MAJEURE:** Neither party shall be deemed to be in default of its obligations hereunder if and so long as it is prevented from performing such obligations as a result of events beyond its reasonable control, including without limitation, fire, power failures, any act of war, hostile foreign action, nuclear explosion, riot, strikes or failures or refusals to perform under subcontracts, civil insurrection, earthquake, hurricane, tornado, or other catastrophic natural event or act of God. In the event of any such occurrence, the affected party shall promptly notify the other party in writing of the nature of the event, the anticipated duration, and the effect it has on the performance of its obligations. The affected party shall take reasonable steps to mitigate the impact of the event and to resume performance as soon as possible after the event has concluded or circumstances have improved.