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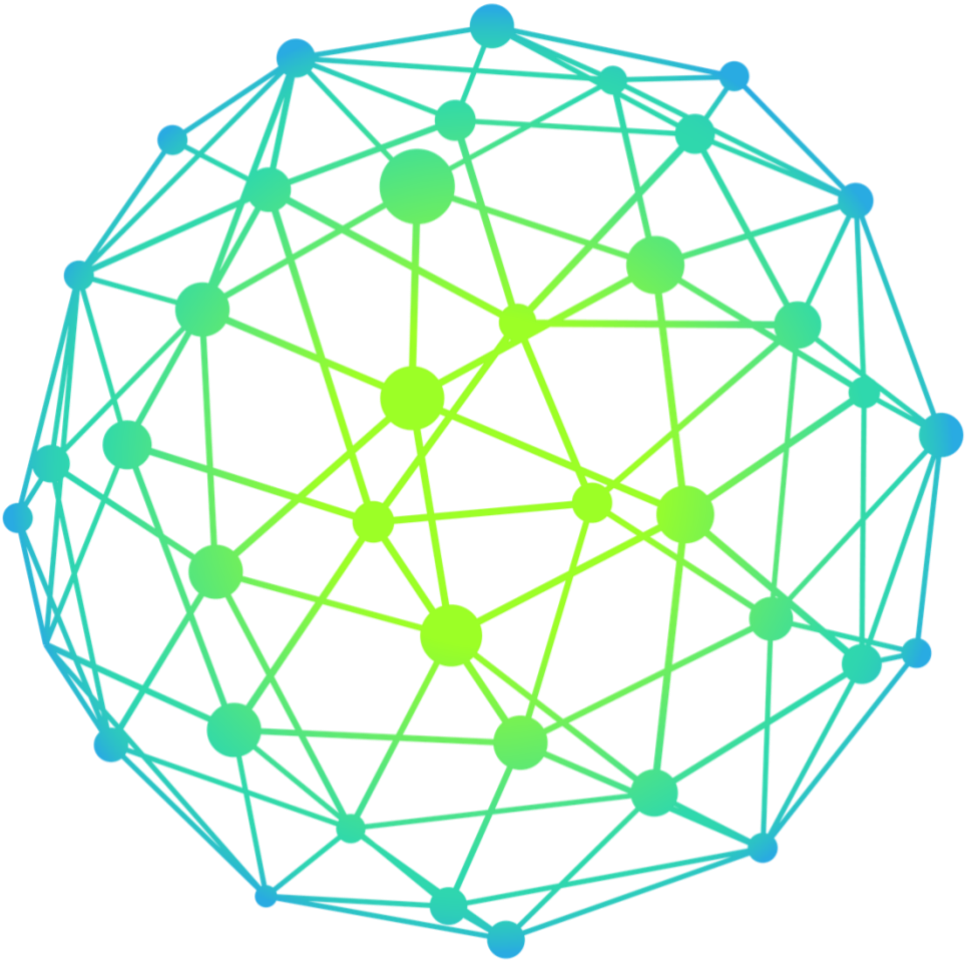

STRATEGIES FOR MODERNIZING STATE MEDICAID PROGRAMS AND TECHNOLOGY

A comprehensive guide to selecting and implementing a modernization pathway

August 2026

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Strategies for modernizing state Medicaid programs and technology

Executive Summary

Modernizing Medicaid Management Information Systems (MMIS) is a mission-critical priority for states seeking greater operational efficiency, agility, security, and improved member outcomes. Aging platforms, evolving federal requirements, increased expectations for interoperability and value, and constrained Medicaid budgets are accelerating the need to reduce technical debt and improve administrative productivity. As a result, Medicaid technology leaders are reassessing legacy MMIS capabilities and evaluating modernization pathways that align with broader agency strategies, integration needs, and workforce constraints.

Because each state's Medicaid program operates in a distinct policy, organizational, and operational context, states should consider tailoring modernization strategies to their particular circumstances. Leaders can pursue full modularization, refactoring, or hybrid approaches, each with different cost, risk, and operational implications. Choosing the most suitable path requires rigorous assessment of interoperability, vendor strategy, data sharing and automation needs, program oversight requirements, and the change impacts on staff and stakeholders. Strong governance, realistic readiness assessments, and well-coordinated implementation are essential to improve outcomes while limiting disruption and security risk.

This guide supports Medicaid directors, program and policy leaders, chief information officers (CIOs), chief technology officers (CTOs), and information technology (IT) leaders who share responsibility for modernization governance, pathway selection, and delivery. The guide provides:

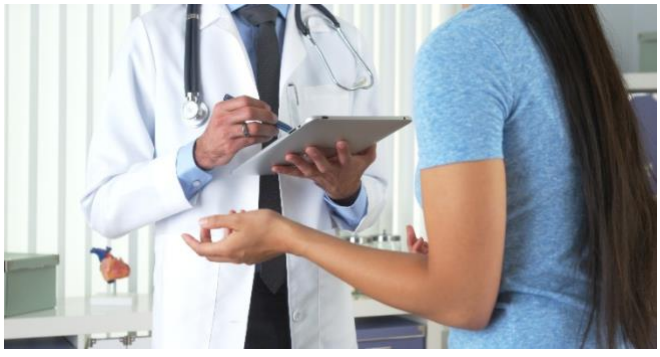
- Lessons learned from peer-state initiatives
- Comparisons of modernization pathways, including technical, operational, risk, and cost tradeoffs
- A checklist of the critical artifacts and business drivers necessary to define objectives, identify gaps, prioritize upgrades, and justify investments
- A structured decision framework to evaluate options and align IT and business leaders on an effective pathway for their state's specific modernization environment and objectives

What is the future of Medicaid Enterprise Systems (MES) modernization?

How can states modernize MMIS to meet the Centers for Medicare & Medicaid Services' modular MES vision while maintaining continuity and controlling cost and risk? How can they choose the mix of modularization, refactoring, or hybrid approaches that aligns to state-specific contexts?

Medicaid leaders can evaluate and select the modernization approach that effectively aligns to program priorities, fiscal constraints, and delivery realities. Although modernization strategies should accommodate evolving technology and policy needs, significant mid-course changes after material investment can erode value; for example, spending $50–100 million on a modular procurement and later transitioning to a different strategy may drive waste and delays. Sustained value requires strategic discipline, governance, and long-term planning to protect fiscal outcomes while maintaining operational continuity and delivering sustainable value.

Successful modernization is measured not by the technology chosen, but by outcomes—whether Medicaid members obtain faster eligibility decisions, experience fewer coverage gaps, and receive more responsive service. Deferring modernization only increases the costs of legacy maintenance, manual workarounds, and workforce attrition while leaving aging MMIS platforms unable to keep pace with new eligibility, billing, reporting, compliance, and waiver requirements—forcing states to absorb disruption on an unpredictable timeline and at an unpredictable cost.



The Foundations of MMIS Modernization

In 2016, the Centers for Medicare & Medicaid Services (CMS) issued the Mechanized Claims Processing and Information Retrieval Systems final rule (CMS-2392-F) and State Medicaid Director letter SMD 16-010 outlining a shift from monolithic Medicaid Management Information Systems (MMIS) to modular, standards-based Medicaid Enterprise Systems (MES). This move was designed to increase flexibility, reduce vendor lock-in, and better respond to program changes.

In practice, replacing core MMIS functions can require tailored modernization strategies given fiscal realities, operational continuity, and workforce constraints. Many states now pursue modularization, refactorization, or hybrid approaches as pragmatic responses to budget availability, documentation maturity, staffing capacity, and risk tolerance. This reinforces the need for a deliberate, context-driven pathway decision.

Selecting a Medicaid modernization pathway is not simply a technical decision or a matter of aligning with CMS' modular MES vision; it is a long-term organizational and fiscal commitment. States should avoid full modularization when they lack sustained executive sponsorship, mature vendor-management capacity, or the operational bandwidth to manage multiple procurements and parallel system operations over an extended horizon. Across states, the most common early mistake is committing to a pathway before completing an enterprise-wide assessment of legacy documentation, business objectives, data dependencies, and organizational readiness. States that invest early in readiness assessment and stakeholder alignment are better positioned to select a pathway that delivers durable value while limiting disruption.

This paper reviews how states are using these approaches and guides Medicaid leaders in choosing the effective modernization pathways for their states.

MMIS Modernization in Practice

A decade later, reality is clear: full modernization at scale has not happened as envisioned in 2016. While many states have initiated modernization efforts, most continue to operate modernized monolithic systems. The anticipated wave of modular transformations has moved far slower than expected—and for reasons that matter to any state evaluating its options now. States have encountered significant challenges balancing the initial investment required for modernization with the downstream commitment required for full modularization.

Modularity brings clear long-term benefits, but it also introduces two practical challenges: upfront investment and downstream commitment. On the front end, agencies must dedicate time to untangling tightly coupled components and decades-old business rules. They must also staff for "dual-run" demands, keep current operations stable as modernization proceeds, and secure funds for module planning and procurement. Longer term, modularity requires sustained organizational capacity: a workforce equipped to manage multiple vendor contracts, technical capability to enable seamless integration across independently developed modules, and operational discipline to align and manage cross-module key performance indicators (KPIs). And all this while maintaining service quality and beneficiary value.

Importantly, slower-than-anticipated progress toward full modularization should not be interpreted as lack of commitment or limited success. Many states that appear "less modular" on paper have achieved meaningful gains in system stability, security, and business agility through incremental modernization. For executive leaders, the more relevant measure of success is not the speed of modular adoption, but whether modernization investments are reducing operational risk, improving responsiveness to policy changes, and strengthening long-term sustainability.

Across modular, refactoring, and hybrid pathways, states can have success by pairing sustained executive sponsorship with strong governance, readiness assessments, and disciplined execution—setting realistic expectations and staying flexible to adapt as conditions change and lessons emerge.

Today's Modernization Imperative

As legacy systems age and become harder to sustain, states face an urgent need to modernize and must recognize that no single pathway fits all. The key question becomes how to determine the effective approach for a state's needs.

There is no one-size-fits-all pathway to modernization, but states that understand their options in full are better able to position their modernization strategies and align with larger agency fiscal and program strategies. The next section explores the distinct characteristics, benefits, and considerations of each modernization pathway available to states.

States succeeding with modularization

Several large midwestern states succeeded by investing heavily in governance and program management, maintaining strong executive sponsorship, and selecting experienced systems integrators. They sequenced modules by business value and technical dependencies, enabling incremental delivery. Outcomes included streamlined eligibility, reduced backlogs, faster benefit delivery, stronger cross-agency collaboration, lower risk through phased deployment, and improved ability to implement policy changes and use data and analytics.

States succeeding with refactorization

One large southern state refactored successfully by shifting maintenance and operations (M&O) to a new vendor, modernizing the development environment, and strengthening the software development lifecycle (SDLC). They avoided full rewrites, delivered manageable increments, engaged business stakeholders to capture institutional knowledge, and used disciplined program management to prevent scope creep. Benefits included fewer disruptions, improved predictability, reduced technical debt, smoother transitions, and a more flexible, secure, maintainable MMIS.

States succeeding with hybrid approaches

A mid-size southern state used a hybrid approach by defining decision criteria by component, setting architecture standards that supported both modularization and refactorization, and engaging an integrator able to bridge multiple technologies. They preserved flexibility and adjusted strategy based on lessons learned across initiatives.

PATHWAY 1: FULL MODULARIZATION

What is Full Modularization?

Full modularization is a transformative approach that replaces monolithic MMIS with a suite of independently procured, standards-based modules. Each module is dedicated to a specific business function (e.g., Provider Management, Claims Processing, Data Warehouse). These modules are connected through a systems integrator (SI), allowing a state to modernize in phases while improving interoperability, flexibility, and vendor optionality.

The Value of Full Modularization

This pathway can help transform the MMIS into a flexible, application programming interface (API)-driven architecture that aligns with CMS' vision of a MES. It enables states to adopt effective capabilities by function, replace individual modules without disrupting the broader system, and introduce new technology incrementally rather than through a single enterprise-wide cutover.

Qualifying Criteria

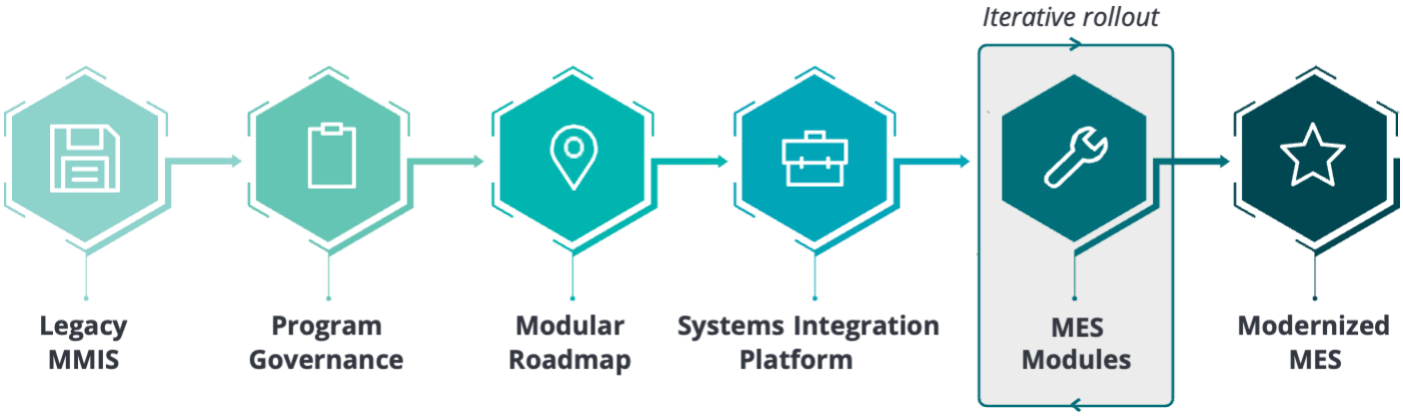
This pathway is suited for states that...

- Have significant technical debt in legacy systems that would be costly to refactor
- Have budget availability for multi-year transformation supported by enhanced Federal Financial Participation (FFP)
- Have business processes that align well to marketplace products or can be easily re-engineered to align with marketplace products and support program policies
- Have or can develop strong vendor-management capabilities

From an executive perspective, full modularization demands not only funding, but sustained leadership attention and organizational discipline over many years. States should be cautious when pursuing this pathway if executive sponsorship is likely to fluctuate, if vendor-management functions are underdeveloped, or if the organization lacks experience coordinating multiple concurrent procurements and integrations. Without these capabilities, the benefits of modular flexibility can be outweighed by integration risk, governance strain, and operational disruption.

How it Works

Steps to fully modularize an MMIS



1 Step 1: Establish Program Governance

State Medicaid executive leaders should establish interdisciplinary governance to direct and oversee the modernization program.

- Form a steering committee or governing body with business, IT, and operations leaders
- Define program objectives, performance metrics, and reporting structures
- Assign roles, responsibilities, and escalation paths
- Establish oversight for risk, budget, timeline, and stakeholder engagement

2 Step 2: Build and Prioritize

State leaders should define and prioritize a modular modernization roadmap sequenced over a 5–10-year horizon.

- Break the end-to-end legacy system into smaller, manageable modules such as Provider Management, Encounter Processing, Member Eligibility, Claims Adjudication, Prior Authorization, and Third-Party Liability; structuring the roadmap in this way improves alignment with commercial off-the-shelf (COTS) solutions and reduces the need for extensive customization
- Determine sequencing based on business needs, data flows, and technology dependencies
- Prioritize modules that deliver the most value or address the most pressing pain points first
- Develop a phased transformative implementation timeline

3 Step 3: Procure and Implement a Systems Integrator (SI)

State leaders should procure and mobilize an SI to coordinate implementation across legacy and new modules.

- Select a partner or team with experience in large-scale systems integration
- Define SI scope to include not only system implementation, but also program management support to help guide and deliver an overall modernization plan
- Integrate SI with existing legacy systems to lay the groundwork for future module cutovers
- Leverage the SI to prepare the organization for incremental transitions while maintaining uninterrupted business continuity

4 Step: 4: Procure and Implement Modules

State leaders should oversee the phased replacement of legacy components by procuring, configuring, testing, and integrating each prioritized module.

For each module:

- Procure or develop the module based on roadmap priorities
- Conduct thorough testing to support compatibility and performance
- Integrate the new module with the SI platform such that the SI platform orchestrates interactions between the module and the legacy components
- Decommission legacy systems and processes, using comprehensive change management and technology integration plans
- Repeat the process for each subsequent module in prioritized order, allowing for lessons learned and iteration

Ongoing Operations and Innovations

State leaders should maintain continuous operations, monitor system health, uphold service levels, and leverage automation to support parallel modules and applications until the entire transition is complete.

- Monitor the performance and availability of all modernized modules/applications and the remaining legacy environments
- Establish and enforce service-level agreements (SLAs) with internal and external stakeholders
- Automate routine tasks, patch management, and continuous upgrades where possible
- Operate legacy and new solutions in parallel as needed, with phased retirement of old systems
- Evaluate technologies/processes for continuous improvements or further innovation

Readiness Criteria: Preparing for Success

Typical state success criteria include:

- **Program Governance:** Empowered, cross-agency governance to resolve issues and guide strategy
- **Modular Roadmap:** Roadmap sequencing tied to real business drivers, technical prerequisites, and available resources
- **Vendor Management:** Dedicated vendor management and SI oversight to support integration and fulfillment of requirements
- **Data Management:** Data interoperability and integration along with consistency and data quality
- **Testing:** Effective integration and regression testing for both module and legacy interoperability
- **Performance Monitoring:** Proactive monitoring/adaptation of infrastructure for performance monitoring and upgrades
- **Change Management:** Communication and training for each module rollout to encourage adoption and reduce resistance

A fully modular approach enables vendor flexibility—including the ability to replace underperforming vendors—while modern components are typically designed to integrate more easily with other systems and support more current architectures. Over time, this can improve agility to respond to program changes and emerging technologies. Phased rollouts help manage risk, drive continuous improvement, and maintain business continuity—allowing legacy and modern systems to coexist without disrupting operations. Equally important is early planning and redesign of centralized operations. These include help desk, call center, and related support functions to maintain smooth day-to-day performance and effective user engagement—along with a clear strategy for transitioning or integrating these capabilities through the vendor, internally, or a hybrid model.

In Summary: Full Modularization

Upfront Cost — High

Operational Cost — Moderate – High

Duration of Modernization — 5 – 10 years

CMS Compliance: Aligned directly with MES certification and enhanced FFP requirements for DDI and M&O

Resource Requirements:

- A small team that has robust vendor management, procurement, SI oversight, and contract administration experience—extensive technical development experience is not required
- A cross-program governance team that spans solution areas

Associated Risks:

- Potential for multiple vendor procurements and system integration complexity
- Moderate business disruptions during module cutover/decommission of legacy components

Full modernization replaces the monolithic MMIS with a CMS-aligned, API-driven set of effective modules integrated through a systems integrator: improving agility, interoperability, and vendor flexibility while enabling phased delivery and continuous operations. Tradeoffs include higher upfront costs and a longer modernization runway. There is also added procurement and integration complexity and potential disruption during module cutovers if governance, testing, and vendor management are not strong.

PATHWAY 2: FULL REFACTORIZATION

What is Refactorization?

Refactorization is a modernization approach that updates and re-architects an existing MMIS through refactoring, re-platforming, and/or selective re-writing rather than full system replacement. From a state Medicaid executive perspective, this pathway is often a strategic choice to stabilize and extend the value of existing MMIS investments while limiting operational disruption and fiscal risk. When paired with strong governance and intentional architectural design, refactorization can meaningfully improve system performance, security, and maintainability while preserving institutional knowledge and familiar business operations. Many states find it better aligned with near-term budget constraints, workforce realities, and the need for incremental, lower-risk modernization. However, this approach may require more deliberate positioning with CMS to demonstrate alignment with MES principles and enhanced FFP requirements,.

- **Refactoring** includes restructuring and rewriting code, providing cleanup that eliminates technical debt and reduces maintenance costs
- **Re-writing** uses new languages to solidify modernization and position the solution for future integrations
- **Re-platforming** is the process of moving the system to new infrastructure and hosting, increasing the use and adoption of modern technologies

States engage external vendors with guidance from the state's internal teams and their incumbent M&O vendor or a newly procured M&O vendor to support these modernization efforts. For example, vendors can help guide technology shifts, while helping states build skills on new platforms throughout the project. Over time, the state may transition operations or maintenance responsibilities back in house after upskilling teams on modern systems.

These three key processes can be independently leveraged to give states flexibility to mix outcomes, to select different vendors regardless of the project phase, or to combine internal and external knowledge. This approach helps reduce costs while allowing continued modernization and innovation.

The Value of Refactorization

The end state is a technically advanced, cloud-based MMIS with improved performance, maintainability, and agility but with familiar operations that retain institutional knowledge. This approach avoids the complexity of managing multiple vendors. It may be especially appealing for states that have trusted technology partners, budget constraints that make full modularization impractical, and strong in-house IT capabilities or a desire to build them through vendor partnership.

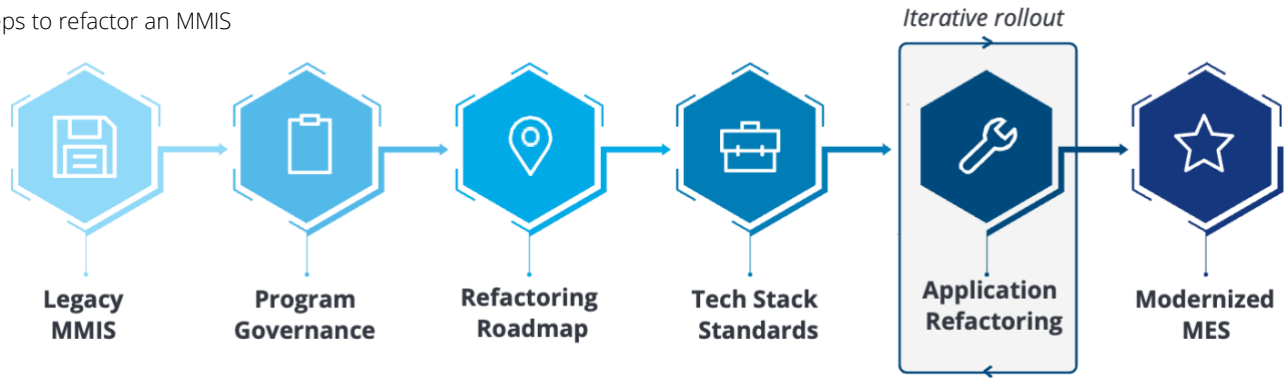
Qualifying Criteria

This pathway is suited for states that...

- Own the underlying MMIS application code
- Have business processes which function well and meet business needs but the underlying technology is outdated and/or difficult to maintain (high technical debt)
- Have some legacy components that work well and do not require changes to meet operational requirements or Medicaid Information Technology Architecture (MITA) maturity goals
- Prefer to have control over the standards/technologies used in the new solution

How it Works

Steps to refactor an MMIS



1 Step 1: Establish Program Governance

State Medicaid executive leaders should establish interdisciplinary governance to direct and oversee the refactorization program.

- Form a steering committee or governing body with business, IT, and operations leaders
- Define program objectives, performance metrics, and reporting structures
- Assign roles, responsibilities, and escalation paths
- Establish oversight for risk, budget, timeline, and stakeholder engagement
- Determine the procurement strategy for refactorization based on program objectives, which may require retaining the existing M&O vendor, re-procuring a new M&O vendor, or onboarding a technical support vendor

2 Step 2: Build and Prioritize Refactorization Roadmap

State leaders should build and prioritize a refactorization roadmap based on business value, technical debt, and transformation impact.

- Complete each transformation wave incrementally to improve system modernization over 3–5 years
- Break down the legacy landscape into applications or functional groups
- Evaluate each for business priority, technical debt, and complexity
- Decide for each: re-write, re-platform, or re-host
- Sequence transformation waves based on value and risk

3 Step 3: Establish Tech Stack Standard

State leaders should define and select the core languages, platforms, and environments for future-state systems, coordinating with an SI vendor to support technical alignment and integration.

- Document and communicate standards and implementation guidelines for modernization teams
- Establish tech stack standards collaborating with an SI vendor: analyze technology needs, set and document standards, and share implementation guidelines with teams and stakeholders

4 Step 4: Refactor Applications

State leaders should incrementally modernize, test, and deploy each application per the prioritized roadmap.

- Modernize (re-write, re-platform, re-host) as designated
- Test thoroughly for performance, security, and integration into the target environment
- Deploy into production, providing robust support for cutover
- Execute detailed change management and cutover procedures
- Iterate based on feedback

Ongoing Operations and Innovations

State leaders should maintain continuous operations, monitor system health, uphold service levels, and leverage automation to support parallel modules and applications until the entire transition is complete.

- Monitor the performance and availability of all modernized modules/applications and the remaining legacy environment
- Establish and enforce SLAs with internal and external stakeholders
- Automate routine tasks, patch management, and continuous upgrades where possible
- Operate legacy and new solutions in parallel as needed with phased retirement of old systems
- Evaluate technologies/processes for continuous improvements or further innovations

Readiness Criteria: Preparing for Success

Typical state success criteria include:

- **Internal Governance:** Governance led by veteran technical and project leaders, empowered for rapid issue resolution and resource allocation
- **Legacy Mapping:** Comprehensive documentation and mapping of all legacy code, business processes, and interfaces—prioritized by business impact, technical debt, and operational priorities
- **Early Tech Stack Standardization:** Selection, documentation, and communication of technology and environment standards at the outset to deliver consistency, maintainability, and easier integration across modernization efforts
- **Staged Modernization:** Strategy built around sprints, parallel operation, and explicit fallback scenarios to limit downtime and risk
- **Automated Quality:** Automated testing frameworks, code reviews, and continuous integration to improve predictability and confirm quality in each release
- **Change Management:** Active plans, including staged communications, stakeholder input loops, and regular progress assessments

In Summary: Full Refactorization

Upfront Cost — Moderate

Operational Cost — Moderate

Duration of Modernization — 3 – 5 years

CMS Compliance: May require additional explanation to CMS that outlines how refactoring the MMIS meets requirements for enhanced FFP and is differentiated from operations and maintenance

Resource Requirements: A moderately sized team with:

- Robust in-house technical skills or a close partner
- SDLC and app architecture experience
- Modern development abilities (cloud, current languages)
- Some vendor management experience, but less intensive for this approach

Associated Risks

- May introduce or expound existing technical debt if technical standards are not thoroughly designed and followed
- May be more difficult to manage project scope as code dependencies are identified
- Introduces the complexities of legacy code
- Recodes but does not immediately improve MITA maturity, which requires intentional design efforts to be incorporated into the MMIS redesign

A refactor-and-modernize approach upgrades applications incrementally on modern platforms while preserving business processes and limiting disruption. It improves performance, builds internal capability, reduces vendor dependence, and enables iterative, low-risk modernization that sustains continuity and accelerates ongoing innovation.

PATHWAY 3: HYBRID MODERNIZATION

What is Hybrid Modernization?

The hybrid approach allows states to modernize MMIS by selectively combining modularization and refactorization, choosing the effective method for each system component based on specific needs and constraints.

The Value of a Hybrid Approach

For many state Medicaid executives, the hybrid approach reflects intentional prioritization rather than compromise. By applying modularization where business transformation or market solutions offer the greatest return—and refactorization where legacy components remain fit for purpose—states can sequence modernization in a way that aligns investment to value. This approach requires strong governance and architectural discipline, but provides executives with flexibility to adapt as conditions, funding, and lessons learned evolve.

The result is a MES that blends new modules with upgraded legacy parts, all integrated through an SI for smooth data flow and operations. This pathway enhances flexibility and customization but requires advanced planning, governance, technical knowledge, and experience to effectively coordinate parallel modernization efforts and manage complex integrations.

Qualifying Criteria

- Diverse MMIS components: some that require fundamental redesign and others that work adequately
- Budget constraints that make full modularization challenging but strategic, targeted, business-value-driven modularization possible
- Willingness to invest in sophisticated planning and governance to manage complexity

How it Works

Steps to a hybrid MMIS

1 Step 1: Establish Program Governance

State Medicaid executive leaders should establish interdisciplinary governance to direct and oversee the hybrid modernization program.

- Form a steering committee or governing body with business, IT, and operations leaders
- Define program objectives, performance metrics, and reporting structures
- Assign roles, responsibilities, and escalation paths
- Establish oversight for risk, budget, timeline, and stakeholder engagement

2 Step 2: Build and Prioritize Modernization Roadmap

State leaders should build and prioritize a hybrid roadmap that sequences both module-based and technical-based modernization, based on priority and business/technology needs over 4 –10 years

- Assess the enterprise environment to identify modules and applications suitable for phased or refactorized modernization
- Gather input from business and technical stakeholders to identify high-value targets
- Prioritize modernization waves (modules or applications), considering operational needs, dependencies, and quick wins
- Create a detailed implementation timeline with blended module and application tracks and key milestones

3 Step 3: Procure and Implement a Systems Integrator/Establish Tech Stack Standards

Procuring an SI Vendor: Engage an SI to provide support and coordinate integration for both legacy and new modules.

- Select a partner or team with experience in large-scale systems integration
- Integrate modules with existing legacy systems to lay the groundwork for future module cutovers

Establishing Tech Stack Standards: Define and document the core languages, platforms, and environments for future-state systems.

- Analyze current technology, target technology needs, and select standards
- Document environment, coding, platform, and deployment standards aligned with governance direction

4 Step 4: Refactor Applications/Procure and Implement Modules

Procuring and Implementing Modules: Replace legacy system components by iteratively designing, procuring, testing, and integrating each prioritized module. For each module:

- Procure or develop the module based on roadmap priorities
- Conduct thorough testing to support compatibility and performance
- Integrate the new module with other onboarded modules and any remaining legacy components
- Cutover legacy functions and processes using comprehensive change management and technology cutover plans
- Repeat the process for each subsequent module in prioritized order, allowing for lessons learned and iteration

Refactoring Applications: Incrementally modernize, test, and deploy each application per the prioritized roadmap. For each application:

- Modernize (re-write, re-platform, re-host) as designated
- Test thoroughly for performance, security, and integration into the target environment
- Deploy into production, providing robust support for cutover
- Execute detailed change management and cutover procedures
- Repeat the process for each subsequent application in prioritized order, allowing for lessons learned and iteration

Ongoing Operations and Innovations

State leaders should maintain continuous operations, monitor system health, uphold service levels, and leverage automation to support parallel modules and applications until the entire transition is complete

- Monitor the performance and availability of all modernized modules/applications and the remaining legacy environments
- Establish and enforce SLAs with internal and external stakeholders
- Automate routine tasks, patch management, and continuous upgrades where possible
- Operate legacy and new solutions in parallel as needed, with phased retirement of old systems
- Evaluate technologies/processes for continuous improvements or further innovation

Readiness Criteria: Preparing for Success

Typical state success criteria include:

- **Unified Governance:** Oversight for modular, refactored, and legacy environments simultaneously, with clear accountability frameworks
- **Component Evaluation:** Prioritization method to decide an effective approach—modularize, refactor, or retain for each functional component
- **Integration and Tech Stack Standards:** Documentation of interface requirements that align with tech stack standards and improve business continuity and technical consistency
- **Vendor Coordination:** Vendor engagement, internal upgrade activities, and ongoing support in tandem—maintaining status dashboards and regular progress reviews
- **Integration Testing:** Comprehensive coordination to support parallel streams delivering a unified user and operational experience
- **Transition Planning:** Consistent, clear transition plans, risk logs, and escalation pathways

In Summary: Hybrid Approach

Upfront Cost — Moderate

Operational Cost — Moderate – High

Duration of Modernization — 4 – 10

CMS Compliance: Requires proper positioning to meet CMS requirements as modules are more likely to align directly with enhanced FFP requirements; more explanation and background may be required to secure enhanced FFP for refactored legacy components

Resource Requirements: A moderately sized team that:

- Has vendor management, technical development, architecture, and integration experience
- Is united via strong program management to coordinate both modularization and refactorization

Associated Risks

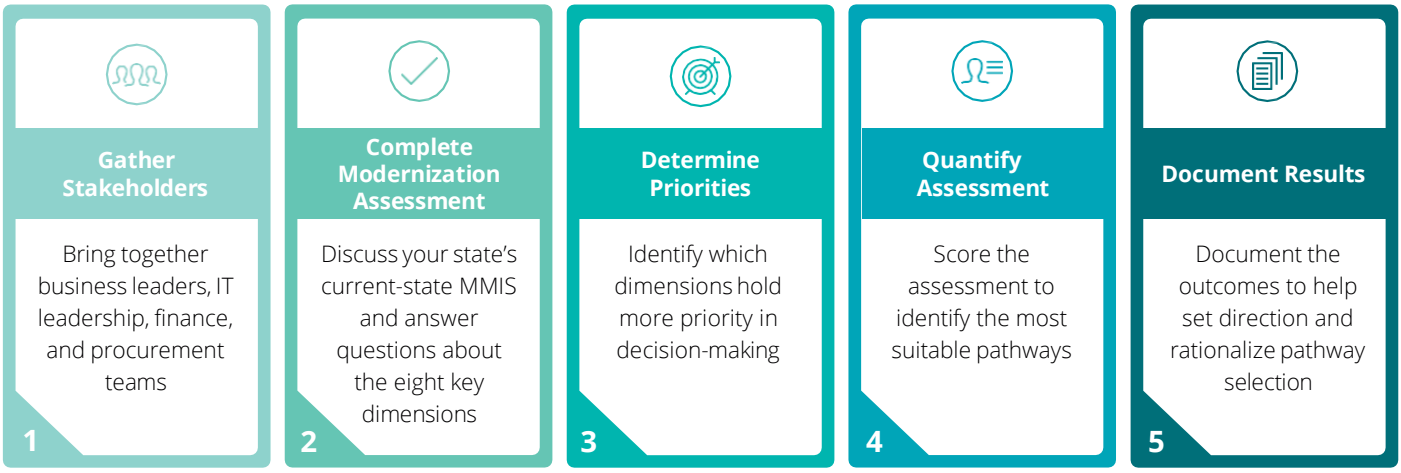
- Coordination complexity across potentially parallel and disparate modernization efforts
- Inconsistent architecture across components
- Potential need for custom integration between modernized legacy components and procured modern components

A hybrid modernization approach lets teams pick modularization or app refactoring per component to reduce risk and enhance value. It supports parallel transformation, better performance on modern platforms, and vendor flexibility (including replacing underperformers). Over time, it can improve agility and enable unified operations and SLA monitoring across both modernized and legacy environments.

SELECTING A MODERNIZATION PATHWAY

Selecting a modernization pathway can appear straightforward when comparing the strengths and tradeoffs of each option. However, determining the right fit for a specific state is often more complex. States must decide whether to invest in modularization consistent with CMS' 2016 direction, pursue refactorization for more incremental change, or adopt a hybrid approach combining elements of both pathways to capture broader benefits despite added complexity. Deloitte's MMIS Modernization Pathway Decision Framework outlines a practical, strategic set of steps states can use to select the approach that aligns with their long-term vision, operating context, and targeted future-state MES.

Deloitte's MMIS Modernization Pathway Decision Framework



1 Step 1: Establish Program Governance

Is the business represented as much as technology?

When making the decision about which pathway to pursue, states should form a cross-functional evaluation team that includes business leaders, operational specialists, program representatives, and IT, data, and finance specialists. Early and active participation from business-focused stakeholders is essential to confirm that the selected pathway reflects the state's operational goals and priorities, not just technical considerations. While this requires a robust governance structure, stakeholder matrix, and established engagement channels, MMIS modernization is most successful when all impacted stakeholders feel bought-in early on.

Executive leaders play a critical role in reinforcing that pathway selection is not irreversible, but neither should it be casual. While hybrid approaches naturally allow flexibility, even states pursuing primarily modular or refactorized strategies benefit from periodic reassessments informed by measurable outcomes. Clear documentation of decisions, assumptions, and tradeoffs enables continuity across leadership changes and strengthens long-term accountability.

2 Step 2: Complete a Modernization Assessment

Which modernization pathway can meet the combined needs of the technology, business, and operations units?

In Deloitte's experience, this step can be time-consuming and involves many discussions with stakeholders across the organization with little consensus. As a result, we have created a modernization assessment approach that reframes the core steps for gaining consensus about MMIS modernization. It provides a methodical evaluation that outputs a modernization pathway recommendation that aligns with strategic priorities, stakeholder preferences, and current-state capabilities. This Modernization Assessment is comprised of two parts:

- Conducting a comprehensive assessment of the current-state MMIS
- Leveraging current-state documentation to evaluate the MMIS' capability to undergo modernization

Modernization Assessment Part 1: Conduct a Comprehensive Current-State Review

Does the state have the information it needs to select a modernization pathway?

The first step to selecting a modernization pathway is to assess the current-state MMIS and clearly outline the objectives of MMIS modernization. This step even applies to states that are reassessing their modernization journeys mid-course. The most methodical approach to this step is to conduct a MITA State Self-Assessment (SS-A) which allows states to efficiently identify future-state goals and subsequently assess gaps in future-state MITA maturity. A MITA SS-A involves conducting a comprehensive inventory of the current-state business, information, and technical architectures and evaluating the quality of existing documentation.

The business, technical and information architectures listed in this section provide the initial guidelines for the documentation review. The more items that a state can check off, the more prepared they are to select a modernization pathway.

States should recognize that gaps in documentation or architectural clarity are common, particularly for long-standing MMIS environments. When significant information gaps exist, executives should view early modernization phases as an opportunity to invest in discovery and documentation rather than rushing toward pathway selection. Establishing a credible current-state baseline reduces downstream risk, improves CMS alignment, and strengthens the quality of pathway decisions.

Technical Architecture

Are the following technical components well documented and understood?

- **High-Level Architecture:** Diagram of MMIS components, interactions, and data flows (i.e., Provider, Claims, Eligibility, and Member Management modules)
- **Infrastructure Architecture:** Documented hosting environment, compute, network, storage, cloud/on-prem, disaster recovery/high-availability, and scalability
- **Application Architecture:** Core application stack, architectural patterns, integration methods, database technologies, user-facing channels, and degree of modularity or monolithic design
- **Security Architecture:** Identity and access management, encryption, logging and monitoring, environment security, and compliance controls
- **DevOps & Operations:** Continuous Integration/Continuous Deployment (CI/CD) approach, release and deployment processes, automation, environment management, and production support model

Information Architecture

Are the following approaches to information exchange well documented and understood?

- **Data Flows & Lifecycle:** Data flow diagrams, transformation mapping, data lineage, and traceability
- **Data Quality & Master Data:** Validation, cleansing, de-duplication, master/reference data processes
- **Integration & Interoperability:** Data exchange formats, APIs, interface mapping with external partners
- **Data Security & Privacy:** Classification, masking, retention, privacy compliance
- **Information Governance:** Stewardship roles, governance council, change, and metadata management

Business Architecture

Are the following business artifacts well documented and understood?

- **Business Capabilities Map:** Major MMIS functions (Claims, Provider, Member, TPL, Finance) aligned to modules
- **Process Flows & Models:** Swimlane diagrams and process flows for core Medicaid business process workflows
- **Business Rules & Workflows:** All rules, exceptions, and workflow orchestration of parallel and interdependent business process workflows clearly documented
- **Stakeholder Perspectives:** Primary users and personas identified; impact and pain points assessed
- **Policy & Regulatory Alignment:** Compliance with state/federal Medicaid and CMS requirements tracked
- **Business Rules Management:** Tabular/Business Process Model and Notation (BPMN) documentation and governance for ongoing rule changes
- **MITA Maturity & Roadmap:** Alignment-level assessed; roadmap for transformation and capability evolution

Modernization Assessment Part 2: Evaluate Current Capabilities Against Eight Key Dimensions

What is the capability of the current MMIS?

Deloitte's experience shows that selecting a modernization pathway can be achieved by assessing the following eight key dimensions:

- Legacy System Condition
- Business Process Uniqueness
- Organizational Capabilities & Culture
- Budget & Funding Realities
- Timeline & Urgency
- Data Complexity & Integration
- Risk Tolerance & Change Management
- Regulatory Requirements

Deloitte uses a simple, targeted questionnaire to conduct a capability assessment of technology, information, and business functions for each dimension; this activity is easier if the state has a well-documented, recent MITA SS-A.

Each dimension is "scored" using a quantifiable scoring system, with input/assessment from stakeholders based on available documentation of the MMIS' current capability. The scores of each dimension serve as the foundation for selecting a modernization pathway in a subsequent step.

3 Step 3: Prioritize Key Dimensions

What are the "north stars" for MMIS modernization?

Since each state's MMIS and organization are unique, Deloitte suggests that states identify key dimensions that they wish to prioritize during their modernization journey. Stakeholder prioritization of dimensions may make one modernization pathway more strategically viable since it has more "influence" than other dimensions. This is an optional step, but may be a key factor in selecting one modernization pathway over another.

4 Step 4: Quantify and Score Assessment to Determine Pathway Viability

What pathway is effective for the state?

Deloitte works with stakeholders to take outputs from the assessment and prioritization conversations to quantifiably evaluate which pathway—modularization, refactorization, or hybrid—is most suitable for the state. The decision framework outlines how "prepared" the state is for each modernization pathway. This promotes further discussion about capability gaps and available mitigation plans if the state wants to continue to explore modernization pathways other than the one identified as most suitable. States also can use the outputs of this decision framework to strategize how to further improve their "suitability" score for their most suitable modernization pathway.

5 Step 5: Document Results and Select Modernization Pathway

After engaging with stakeholders to determine the most suitable modernization pathway, states should document the decisions and discussions made throughout the process to serve as reference and benchmarking materials throughout modernization. Documenting results also will be useful during the Advance Planning Document (APD) process.

	Modularization	Refactorization	Hybrid
Initial Cost	High	Moderate	Moderate
Ongoing Cost	Moderate-High	Moderate	Moderate-High
Timeline	5-10 years	3–5 years	4-10 years
Full-Time Equivalents (FTEs) Required	10-20	15-30	15-25
CMS Compliance	Clearest path	Needs justification	Viable path with component-specific justification
Risks	Vendor and integration complexity; integration complexity across modules; operational disruption during phased transition	Tech debt rollover; scope creep as dependencies emerge; limited immediate improvement in MITA maturity without intentional design	Coordination complexity across parallel efforts; inconsistent architecture across components; custom integration between refactored and procured modules

BEYOND PATHWAY SELECTION

After pathway selection comes the next step: execution. As states embark on their modernization pathways and engage in planning, procurement, design, and implementation activities, they should recognize that pathway selection is not irreversible. Hybrid approaches inherently allow adjustment of strategy for components not yet addressed. Even states committed to pure modularization or refactorization can adjust their approaches based on experience, market evolution, or changed circumstances. That is not to say that pathway selection should be approached lightly—rather, that selecting a pathway is just the first key step on the road to modernization. By approaching it methodically and intentionally, states can set themselves up for a successful MMIS modernization regardless of pathway.

LOOKING AHEAD

State Medicaid agencies stand at a critical juncture, and the monolithic systems of the past may not sustain the programmatic complexity and technological expectations of the future. Modernization does not require adherence to a single prescribed approach. By evaluating the three pathways and aligning the chosen approach with state-specific needs and capabilities, states can chart a successful course toward a modern, flexible, and sustainable MES.

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