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MEDICAID MANAGEMENT INFORMATION SYSTEMS

Increasing the Likelihood of Successful Procurement and Implementation

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Medicaid Management Information System (MMIS) developments are like the Tolstoy quote, "Happy families are all alike; every unhappy family is unhappy in its own way." MMIS successes are all similar, but MMIS failures are failures in their own unique ways — or there are as many ways that MMIS developments fail as there are failures. However, states can be proactive to increase the likelihood for success.

WHAT IS AN MMIS?

An MMIS is a "mechanized claims processing and information retrieval system" — essentially a claims adjudication system that states use to process their Medicaid claims. While many state leaders may not understand every detail of what an MMIS is, most are aware that the contracts to develop, implement, and run these systems are massive. In some states, a new MMIS represents the single largest information technology (IT) contract in the state's history. Like other components of Medicaid Enterprise Systems (MES), the Centers for Medicare & Medicaid Services (CMS) pays 90% of the cost to build a new system, plus 75% of the maintenance and operations. This means that while the contract will be a significant financial commitment for the state, the federal government will make the vast majority of the payments.

It typically takes years to complete a new MMIS implementation. Despite the considerable expense and the accompanying public, state, and federal scrutiny, perhaps the most interesting thing about MMIS implementations is the frequency of failure over the years. It is more important than ever for states to avoid MMIS failure because some canceled MMIS implementations have **resulted in CMS withholding payments for new MMIS implementations**.[1]

1. This is policy, not regulation. CMS approves all funds and scrutinizes future funding when a failure happens. CMS wants to be good stewards of the 90% match and can disallow future matching funds when using matching funds on a canceled project.

CANCELED AND TROUBLED MMIS IMPLEMENTATIONS

Below is a list of some MMIS implementations resulting in cancellation, cessation, or implementation without certification:

- Canceled before delivery
  - New York[2] (2017)
  - California[3] (2016)
  - Montana[4] (2016)
  - Maryland[5] (2015)
  - Nebraska[6] (2008)
- Ceased system development; no restart
  - South Dakota[7] (2008)
- Implemented but not certified; paid over $500 million in temporary payments
  - Maine[8] (2005)

In addition to these system failures, numerous implementations move forward only to result in negative press and admonishment by state leaders.

WHAT TAKES SO LONG, AND WHY IS MMIS DEVELOPMENT SO DIFFICULT?

It may seem like MMIS development should be quick and relatively risk-free. After all, almost all implementations begin by building upon an existing, certified system from another state. The selected MMIS vendor will often choose to take a "copy" of a system they implemented in another state (usually with similar population and policies) to use as a starting point, and ultimately customize this to match the new state's requirements. Considering that all state Medicaid programs build upon the same federal legislation, one might assume the programmatic differences between states would be minimal.

> An outsider may look at this and think, "We'll take an existing certified MMIS, make specific changes for our state, convert the data, and be up and running in no time."

This has proven not to be the case, **especially for states changing vendors and while moving to a new system**. Federal legislation contains enough ambiguity to allow each state a certain amount of latitude with policy decisions. This leeway defines the scope, and ironically makes it difficult sometimes to define the scope, of a MMIS development. Expect that 80% of the rules

2. Todd Clausen, "Xerox spinoff Conduent posts loss, won't complete NY work," *Democrat & Chronicle*, February 22, 2017. https://www.democratandchronicle.com/story/money/business/2017/02/22/xerox-spinoff-conduent-posts-large-loss/98245166/.
3. Alexander Soule, "Xerox to Pay California Over $100 Million for Scrapping Medicaid System Contract," The Advocate, Government Technology, April 20, 2016, http://www.govtech.com/state/Xerox-to-Pay-California-Over-100-Million-for-Scrapping-Medicaid-System-Contract.html.
4. Ibid.
5. Meredith Cohn, "Maryland fires firm upgrading Medicaid technology, may seek money back," *Baltimore Sun*, December 9, 2015, http://www.baltimoresun.com/health/bs-hs-medicaid-contractor-dispute-20151209-story.html.
6. Heather B. Hayes, "Why are Medicaid MIS contracts failing?" Healthcare IT News, October 30, 2009, https://www.healthcareitnews.com/news/why-are-medicaid-mis-contracts-failing.
7. Jonathan Ellis, "S.D. has battled with CNSI for six years to make digital upgrade," Edgar County Watchdogs, April 6, 2014, http://edgarcountywatchdogs.com/2014/04/s-d-has-battled-with-cnsi-for-six-years-to-make-digital-upgrade/.
8. Peter Frost, "Black marks hover over firm Illinois taps for part of Medicaid program," *Chicago Tribune*, August 20, 2013, http://articles.chicagotribune.com/2013-08-20/business/ct-biz-0821-medicaid-cnsi-20130821_1_medicaid-program-illinois-department-cnsi/2.

(business and processing logic) between states will be the same while the other 20% results in years of work and millions of dollars in development costs. While each MMIS has multiple subsystems, and therefore much work to do, these are just a few tasks that each vendor should complete in the claims adjudication subsystem:

- **Edits and audits:** Compare 1,000-plus edits in "new" MMIS to each corresponding edit in the "legacy" MMIS; review every edit to determine what to add, modify, or disable.
- **Claim-type assignment:** Evaluate discrepancies regarding different claim types. For example, one state (system) has a "Laboratory" claim type while another considers this a different type; evaluate all logic for the claim-type assignment and decide how to merge or split.
- **Pricing rules:** Deal with different types of claims pricing between states; this process is time-consuming and difficult to achieve accuracy, as states price claims differently. Using Inpatient as an example, states may use one of the following pricing methodologies: per diem Cost to Charge Ratio, All Patient Refined Diagnosis Related Groups (APR-DRG), Medicare Severity Diagnosis Related Group (MS-DRG), All-Payer Severity-Adjusted Diagnosis Related Group (APS-DRG), or TriCare DRGs. We have also seen other pricing algorithms used, and even if states use the same type of DRGs, there will be policy variations such as one state using cost outliers, another using day outliers, and yet another may use both.
- **Surprises and unknowns:** Ask questions to uncover the policies most have never seen or heard before; every state seems to have a couple of these, and it is often difficult to find the right people or ask the right question to find these issues.

WHY DO MMIS IMPLEMENTATIONS FAIL?

All MMIS implementations face challenges, but some start to fail from the earliest stage of the project. Among these first tasks is writing the Request for Proposal (RFP), which is the document that clarifies the desired system functionality so that interested vendors can respond with a bid. States may choose to author the RFP in-house, or they may hire a technical writer/proposal vendor to assist with this important task. In either case, it is imperative that the authors consider:

- Current system functionality.
- Federal and state Medicaid policy.
- Variety of software and hardware solutions available in the marketplace.
- Time and effort required to design, build, test, and implement such a complex project.

> We have seen RFPs with other states' names in the requirements. We believe this was the result of a RFP vendor copying a different state's requirements and not updating the state name. The best RFPs are detailed and specific to the state's individual needs.

These are some specific examples of actions that often lead to failed MMIS implementation:

- **Writing generic or nebulous RFPs:** Many RFP requirements are broad, yet vague. For example, some RFPs state, "New System must contain all legacy system functionality." It is difficult for vendors to realistically scope against such requirements, and if the new system must do what the old system did, and look like the old system looked, why does the state need a new system?

- **Requiring unreasonable time frames:** Vendors agree to timelines and costs based on high-level RFP requirements. Because the vendor usually does not fully understand the specific requirements until project kickoff and in-depth research and conversations occur, delays often begin immediately.

  Also, the state may require an unrealistic timeline for implementation (e.g., 12 months for a new implementation). Vendors know they are less likely to win the contract if they respond with a longer, more reasonable implementation time frame (e.g., 36 months). This can lead vendors to propose timelines they know to be challenging, if not inaccurate.
- **Underestimating the time and effort required:** Behavioral economists Daniel Kahneman and Amos Tversky were the first people to explain "Planning Fallacy." They observed teams tend "to underestimate the time required to complete a project, even when they have considerable experience of past failures to live up to planned schedules."[9] Vendors and states are guilty of this during Medicaid systems projects. Medicaid is a unique beast. Vendors are typically juggling several implementations. State teams continue to work on their "real jobs" while also providing direction to the new vendor. States and vendors do not typically plan well enough to provide time and money for issue response, resulting in negative public perception when delays inevitably occur.
- **Inability to communicate detailed requirements:** States struggle to provide detailed requirements. Part of the issue is that a state's current system vendors can "read between the lines" for their requests. The legacy vendors understand requests differently (and better) because they have worked with the state for many years. They, for example:
  - **Need less direction:** Because legacy vendors have worked with states over many years, they can more easily translate high-level requirements into detail-level designs. They speak the same language.
  - **Understand previous issues:** When the state gives requirements, legacy vendors can ask better questions, and states begin to rely on that. The legacy vendors ask better questions because they understand the issues from previous implementations. Discuss these issues during requirements gathering with a new vendor to avoid rework (and schedule delays) in the future.

A new system business requirement is not synonymous with a description of how the current system operates.

Also, we have seen states explain how their current system works as opposed to providing business requirements. This leads to extended requirements sessions and has the potential to cause heavy system customization (which takes longer and is costlier).

- **Not understanding "product" vs. "customized" system:** Some RFPs ask for a "product" that can be customized, but during requirements, the state asks for non-product solutions. Medicaid systems are not fungible commodities. The state has a State Plan, administrative code, billing instructions, etc. At the very least, states should expect heavy customization, but more realistically, every project will require coding changes to a certain degree. These changes take time.

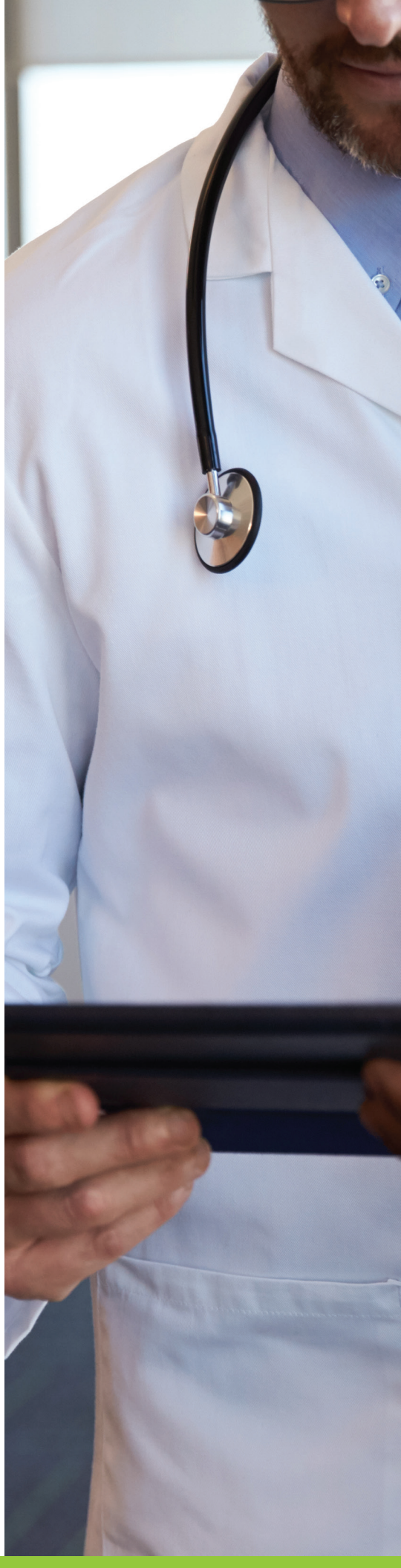
9. Daniel Kahneman and Amos Tversky, "Intuitive Prediction: Biases and Corrective Procedures," TIMS Studies in Management Science, June 1997, http://www.dtic.mil/dtic/tr/fulltext/u2/a047747.pdf.

- **Shortening testing periods and ineffective testing:** While "agile" is the new implementation method du jour, most implementation plans require a separate, dedicated testing phase before go-live. While we may refer to these testing cycles as parallel testing, User Acceptance Testing (UAT), pilot testing or something else, the intent of testing is to validate that the new system adequately works with real data. When project delays occur, the state and vendor must agree to either change the go-live date or compress the schedule. Project managers frequently compress testing schedules since testing is the final phase. That means there is less time to do the same amount of testing work, which often leads to ineffective testing.

  Testing should be robust, and mimic, as much as reasonably possible, real-world conditions. The state should engage providers for UAT and load the testing region with the most current and accurate member, provider, reference, etc., data as possible. When testing occurs with inadequate data, testers generally find fewer issues (resulting in the appearance of more, and more significant, errors in production).
- **Resulting challenges from length of engagement:** It can take up to four years (or more) to procure and implement a new MMIS. The Request for Information (RFI), RFP, and award processes alone can take a year. The implementation itself can take 36 months or more. Meanwhile, technology, and federal and state requirements, continue to advance. This leads to delays since these changes must be implemented, although unknown during the estimating process.
- **Differing requirements between Medicaid systems:** There is an old saying in the MMIS world: "If you've seen one MMIS, you've seen one MMIS." That is because Medicaid guidelines and requirements differ between regions and states. While most state Medicaid experts and experienced MMIS vendors will agree that 80% of the requirements are the same, the scope of the remaining 20% is virtually unknown on the first day of the project. Determining and scoping the changes is a majority of the work over the course of the implementation (i.e., if two states had the exact same State Plan, the implementation would take less than a year, since there would be no need to update the system code; it would require only configuration and importing data into the new system).

STRATEGIES TO REDUCE FAILURES

- **Write specific requirements in RFP:** This will allow the vendor to scope the work correctly.
- **Select reasonable time frames for implementations:** For new implementations of a core MMIS (i.e., provider, member, claims processing, and payment subsystems), allow at least 36 months.
- **Dedicate staff to system development:** Staff assigned to system development should have their workload decreased.
- **Train staff:** For dedicated staff, train them to better deliver requirements.
- **Leverage legacy system documentation:** Always require the legacy vendor to document its solutions. Leverage this documentation during the next system's development. This will help you make sure that your team has the latest requirements — which will help your team give those requirements to the new vendor.
- **Require appropriate testing:** Even if it means delaying implementation, require complete and thorough testing of the system. Perform UAT with robust test data. The data should, as much as possible, mirror production data.



- **Other strategies:**
  - **Testing complexity:** The UAT plan should include providers submitting claims. It should include different provider types (e.g., hospitals, practitioners, Federally Qualified Health Clinics [FQHCs], Home and Community Base, [HCBS] etc.). The vendor should monitor the volume of test claims submitted and follow up when providers raise issues.
  - **Re-enrollment:** If the state is performing a re-enrollment prior to go-live, monitor the new system's provider enrollment volume, especially for providers that have submitted claims within the past year.
  - **Post-go-live process:**
    - **Roles:** Establish clear roles and responsibilities for claims review after go-live. Make available at least one expert who can research the more complex claims issues.
    - **Increased call volume:** MMIS vendor should plan for, at least for the first month, increased call volume. They should have a plan to deal with the higher volume.
    - **Interim payments:** The state should decide when they will release interim payments after go-live. It should include the reason they will release interim payments, how to calculate the amount of the payment, and the method (and time frame) for provider repayment.

INCREASING COMPLEXITY AND MODULARITY

Development and certification[10] have increased in complexity over time. While MMIS implementations previously only had states and a single vendor, the landscape looks much different now. These are the players in the Medicaid Enterprise implementation process these days:

- The state Medicaid agency (SMA), the ultimate customer and manager for all facets
- The solution vendors for each module (due to a push for modularity, discussed below)
- The Independent Verification &Validation (IV&V) vendor, which is now mandatory and strongly encouraged from the beginning of the life cycle
- The Program Management Office, (PMO) which provides program/project management guidance for all
- System integrator

In a nutshell, there are now more players involved, meaning that the state now needs to manage many more contracts at the same time (often while running their existing system). The outcome of these changes is unclear at this point, but they could increase the risk for a state.

Meanwhile, because of the variety and frequency of MMIS implementation failures, CMS has directed states to try alternative approaches. It is unclear how effective new strategies will be for improving implementations. One concept dominates this strategy:

- **Modularity:** While it has not created a core definition of modularity, CMS has been pushing for it. This push dictates that states move to bidding for components, as opposed to the traditional "big bang" approach. At this point, it is not clear what impact this will have on states, and this has the potential to cause larger problems than a "big bang" failure. For example, if a state were trying to implement multiple subsystems to replace an existing MMIS (such as member, claims, provider, etc., along with an Enterprise Service Bus — and these had the same implementation date in order to replace the existing MMIS), and one subsystem vendor failed, the state could theoretically need to pay all other vendors, while not being able to replace their existing MMIS. Additionally, I've had at least one state leader tell me that they anticipate that modularity will escalate costs.

> Modularity may not be the panacea it is touted to be. It could, paradoxically, increase risk to states. Also, it will not solve the problems that have historically caused MMIS failures.

Additionally, we have seen states struggle to provide proper oversight of a single vendor during implementations, so managing many vendors at once may prove to exacerbate the challenge. States may also need a System Integrator, yet another vendor, who is responsible for integrating and overseeing all other module vendors. While this role brings with it an added expense, this also could make implementations more complex (or put states more at risk if the Integrator does not bring the right skill set or is poorly managed).

States should monitor whether modularity does reduce risk and cost (or increases both). And if states do not fix the historical flaws with their procurements (such as those outlined in the "Why Do MMIS Implementations Fail?" section), modularity approaches will have the same success rates as traditional implementations.

10. Medicaid Enterprise Certification Toolkit, v2.2 https://www.medicaid.gov/medicaid/data-and-systems/mect/index.html.

OTHER APPROACHES

It is also worthwhile to discuss the following topics:

- **Agile with sprints:** With "agile" and "sprints," vendors develop smaller "chunks" of code and deliver it to clients. This is the opposite of the "waterfall" approach, where phases of development are distinct and build upon the previous phase. In theory, "agile" development succeeds by preventing the project from getting off track, or at least letting everyone know it is off track very quickly. With deliveries of code in 15-day cycles, the state and vendor team(s) feel engaged and are continually involved (responsible) in the system development. Again, it is not clear that this will have any real impact on final deliverables. Some states refer to their development as "waterfall in agile clothing," meaning that while the vendor states they are developing the system using agile principles, the development is mostly following a waterfall methodology.
- **Cloud:** Some states have moved from buying in-house hardware and enterprise class infrastructure, instead shifting to new technologies such as private cloud and cloud software as a service (SaaS). Again, it is too early to tell if this will impact MMIS implementations' success.
- **Have limited MMIS:** States that are nearly 100% managed care may be able to move away from a traditional MMIS. Nearly all claims are processed by Managed Care Organizations (MCOs), so states may not need a full-blown MMIS. At least one state has outsourced fee-for-service claims processing to one of their MCOs. What MCO-heavy states really need is an ability to receive claims data in an Enterprise Data Warehouse for inventory and analysis, along with several other subsystems.
- **Standardize states:** While CMS has not mandated that states standardize requirements, this would be the one approach that would reduce development time and risk. If, for example, CMS mandated all states to have a common set of claims edits (with specific claim numbers), this would save development time for the state and the vendor. Also, as an example, if CMS standardized the approach to inpatient pricing (say by requiring systems to only use per diem and APR-DRGs to pay claims), this would allow for vendors to move toward a commercial off-the-shelf (COTS) approach, saving both time and money.

REDEFINING SUCCESS

Most every recent implementation resulted in a delay, price overrun, or both. This is the nature of the proverbial beast. These systems are so complex that, without some type of federal standardization, implementations will continue to be long and complex. The best that states might be able to do is redefine what a successful implementation looks like.

As any Medicaid leader knows, reporting trouble for a Medicaid agency is easy fodder for media and legislators alike. When delays or cancellations occur, concerned citizens, political watchdog groups, and oppositional vendors are quick to report the status. Even when systems go live, the media will find at least one provider or group that will say it is not getting paid or not receiving the right amount, and they will soon go out of business because of the failed implementation. The media, legislature, and public often target Medicaid leaders, whether warranted or not.

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Implementing Medicaid systems is tough work, as evidenced by the failures of teams specializing in delivering Medicaid systems. At the same time, CMS is increasingly holding states accountable for failures by withholding future MMIS development dollars if a system previously failed. Meanwhile, the complexity of implementing systems is increasing over time because of modularity and other factors. State leaders are in a difficult position if they need a new Medicaid system.

Chuck Yeager said, "If you can walk away from a landing, it's a good landing. If you use the airplane the next day, it's an outstanding landing." An MMIS implementation is similar. If implementation occurs, consider it a good implementation, but wait a full year to measure true success. At that point, it is fair to evaluate if the MMIS is:

- Pricing and editing claims correctly.
- Paying providers correctly per the approved rates and policies.

Also, are the "fires" out? And are system modifications less expensive and quicker to implement than the previous system? If so, the MMIS implementation is a success, regardless of contrasting opinions.