

February 19, 2015

Letter Report 2014-043

The Governor of California
President pro Tempore of the Senate
Speaker of the Assembly
State Capitol
Sacramento, California 95814

Dear Governor and Legislative Leaders:

This letter report provides an update on recent events related to the California Medicaid Management Information System (CA-MMIS). Senate Bill 853 (Chapter 717, Statutes of 2010) requires the California State Auditor to monitor the transfer of operational responsibility for CA-MMIS to Affiliated Computer Services, a Xerox company (Xerox), and the subsequent design, development, and implementation of a replacement system. This letter reports on the status of Xerox's implementation of a replacement for CA-MMIS, which will be called Health Enterprise.

On April 19, 2012, we reported that Xerox had successfully assumed responsibility for operating CA-MMIS and had begun processing the State's California Medical Assistance Program (Medi-Cal) claims in September 2011 after two delays. We also reported that Xerox was in the preliminary stages of developing Health Enterprise. In our second report, dated February 25, 2014, we reported that the implementation of Health Enterprise had been delayed partly because project teams did not fully understand and/or were not following the original software development approach. Rather, project teams had essentially been proceeding as if they were developing new software, instead of determining how to adapt Xerox's existing software product to meet California's needs as originally intended. In addition, Xerox experienced turnover of key staff, which exacerbated this problem. Because of these delays, the California Department of Health Care Services (Health Care Services) had not paid Xerox for any of its work on Health Enterprise. We also reported that California's delays in implementing a replacement for CA-MMIS were similar to some other states' experiences with Xerox in implementing similar systems. At the time of our last report, leaders of the Health Enterprise project had also recently announced that the project team would be transitioning to a new software development methodology—known as an agile approach.

Xerox implemented the first major release of Health Enterprise in several phases at the end of 2014. This first release was designed to provide a common infrastructure that will be leveraged in four subsequent releases. As of January 2015, approximately 100 Health Care Services and Xerox employees were using the functionality associated with Release 1 in production. However, we believe it will be challenging for the project to complete the second major release by its planned completion date of June 2015 because Release 2 is far more complex than Release 1 and will provide functionality to users beyond Health Care Services and Xerox. Moreover, project oversight entities have raised significant concerns that the project must address to increase the likelihood that Xerox will produce a timely and high quality replacement for CA-MMIS. Xerox also continues to experience problems implementing Medicaid Management Information Systems for other states. Finally, Health Care Services was required to prepare a new special project report because of the transition to the agile methodology and increased project costs.

Background

In 1965 Congress amended the federal Social Security Act to create Medicare, and in that same year established a state-optional medical assistance program known as Medicaid. As authorized by federal law, California implemented Medi-Cal, which provides health care services to eligible beneficiaries that the State and the federal government finance jointly. Health Care Services administers Medi-Cal. CA-MMIS is a computer system used to process payments to health care providers who participate in the Medi-Cal fee-for-service program, including physicians, pharmacies, hospitals, and other providers. CA-MMIS was originally developed in the late 1970s, and since 1987 had been operated by Electronic Data Systems. Hewlett-Packard acquired Electronic Data Systems in 2008 and continued to operate CA-MMIS. Later in 2008, Health Care Services solicited proposals from firms qualified to assume operational responsibility for CA-MMIS, including processing provider claims for payment and providing certain other services to providers and beneficiaries under the current system, and to design, develop, implement, and operate a replacement system. According to Health Care Services, CA-MMIS needs to be replaced because it is over 30 years old, its operations are inefficient, maintaining the system is difficult, and the risk of system failure is high. In addition, CA-MMIS is not currently compliant with Medicaid Information Technology Architecture standards. Xerox was the successful bidder, and in 2010 Health Care Services awarded it a \$1.7 billion contract with an expiration date of June 30, 2016. However, optional extensions could allow the contract to be extended through June 30, 2021.

As Table 1 shows, Xerox expects to roll out the Health Enterprise system in five major and minor releases. In each release, Xerox will implement portions of the new system that will provide functionality for specific business processes. According to the deputy director of Health Care Services' CA-MMIS division (deputy director), each business process component within a release is prioritized based on business value, and the highest priority components are included in the major releases while the lower priority components are included in the minor releases. As described later in this letter report, Xerox completed the first major release in December 2014. Although Xerox still projects that the fifth major release of the new Health Enterprise system will be completed in December 2016, it does not expect to finish the associated minor releases until September 2017.

Table 1
Xerox's Schedule for Implementing Health Enterprise Using the Agile Software Development Approach

RELEASE	KEY BUSINESS PROCESS FUNCTIONALITY ADDRESSED IN EACH RELEASE	SCHEDULED IMPLEMENTATION DATE	
		MAJOR RELEASE	MINOR RELEASES
1	Health Enterprise Web site portal that provides single sign-on access to the system and a security framework.	Completed in December 2014	June 2015
2	Processing claims, plan management, and financial management for the Child Health and Disability Prevention program, case management for the In-Home Operations program, and pre-work (that is, analysis and mapping) related to plan management for the Federal Qualified Health Center program.	June 2015	November 2015
3	Pharmacy, medical supplies, physician administered drugs, long-term claims, and drug rebates.	December 2015	May 2016
4	Certain medical authorizations and processing of additional types of Medi-Cal claims, supporting processes, and financial management.	June 2016	November 2016
5	Processing of all remaining types of Medi-Cal claims, all other authorizations, supporting processes, and financial management.	December 2016	September 2017

Source: Xerox.

Health Care Services is ultimately responsible for overseeing the implementation of Health Enterprise. In addition, the California Department of Technology (CalTech) has a statutory responsibility to monitor Xerox's implementation of Health Enterprise. Health Care Services contracts with CalTech to provide independent project oversight (IPO) and PCG Technology Consulting to provide independent verification and validation services (IV&V).¹

As part of our own monitoring activities, our information technology expert (IT expert) reviews IPO and IV&V monthly oversight reports and meets regularly with their staff as well as the deputy director to stay apprised of project developments. We also observe CA-MMIS advisory group meetings, attended by leaders of Health Care Services, Xerox, IPO, and IV&V, to ensure that the group appropriately responds to emerging issues and risks. Finally, we attend periodic updates Health Care Services provides to legislative staff to confirm that it appropriately communicates the status of the implementation of Health Enterprise.

Xerox Implemented the First Major Release, but Implementing Release 2 Will Be Significantly More Challenging

Xerox implemented the first major release of Health Enterprise in several phases at the end of 2014. The first portion—Release 1A—was implemented in October 2014 and includes the Health Enterprise Web site portal that provides single sign-on access to the new system and a security framework that includes strong password requirements along with a self-service function that allows users to reset their passwords and retrieve forgotten user identification information. The second portion—Release 1—was implemented in three phases in December 2014 and provides single sign-on access to various applications and certain reporting functionality. This first release was designed to provide a common infrastructure that will be leveraged in the four subsequent releases, but it only addressed 27 of the roughly 6,000 functional requirements that are estimated for all five releases. However, the significance of functional requirements varies as does the level of effort to address them with the new system. As of January 2015 approximately 100 Health Care Services and Xerox employees were using the functionality associated with Release 1 in production, but Health Care Services expects the related minor releases to broaden the rollout to 800 users by the end of March 2015. Xerox estimates that approximately 134,000 users (for example, providers, Xerox employees, and Health Care Services employees) will make use of Health Enterprise after all five releases are implemented. Health Care Services anticipates paying Xerox \$11.8 million for activities related to Release 1 by May 2015.

Release 2 is far more complex than Release 1 and is expected to address over 1,300 functional requirements, which is significantly more than the 27 functional requirements addressed by Release 1. In addition, Release 2 will provide functionality to users beyond Health Care Services and Xerox. Specifically, Release 2 is anticipated to provide functionality for processing claims and for plan management as well as financial management for the Child Health and Disability Prevention program. As a result, providers for this program will be accessing

¹ Project oversight is an independent review and analysis of a project to determine if it is on track to be completed within the estimated schedule and cost, and will provide the functionality required by the sponsoring business entity. IV&V is the process of evaluating software to determine whether the products of a given development phase satisfy the conditions imposed at the start of that phase and evaluating software during or at the end of the development process to determine whether it satisfies specified requirements.

Health Enterprise as part of the Release 2 implementation. In addition, Release 2 will provide case management functionality for the In-Home Operations program and will include pre-work (that is, analysis and mapping) related to plan management for the Federally Qualified Health Center program.

We believe it will be challenging for the project to complete the second major release by its planned completion date of June 2015 because the amount of time the project has to complete the underlying work is similar to the one-year time frame for the first major release. We will monitor Xerox's progress toward implementing Release 2.

Project Oversight Entities Have Reported Several Concerns That May Result in Delays and Quality Issues

The project's shift to a hybrid agile software development methodology presents both opportunities and risks to the State. According to our IT expert, the agile approach may facilitate a more rapid delivery of necessary business functionality to the State, and provide opportunities for the project to better adapt Health Enterprise to California's business processes while also better aligning and modernizing those business processes to take advantage of more modern technology. However, Health Care Services and Xerox have very limited experience using these agile methods on projects of this size and complexity. In addition, industry experience with agile methodologies on this scale is limited, providing only modest guidance regarding best practices and potential pitfalls. Finally, the project is using a hybrid approach that embraces some agile practices while retaining aspects of a more traditional software development methodology, which further complicates the development of Health Enterprise. These conditions make it more difficult to monitor and oversee the development of this replacement system.

Both the IV&V and IPO have expressed persistent concerns regarding the insufficiency of detailed documentation describing the agile software development methodology. In June 2013 the project reported it was not making expected progress developing the replacement system because project teams did not fully understand and/or were not following the agreed upon software development approach. During the re-planning triggered by these delays, the project decided to shift to the agile methodology. Xerox submitted a software development approach document to reflect the shift to the new agile methodology in June 2014. The purpose of this document is to provide a comprehensive description of the engineering and quality management processes that Xerox will use to develop Health Enterprise. The IV&V and IPO were concerned with this document because some aspects of the software development approach were not thoroughly documented, and in other cases the document referred to subordinate or supporting procedures that had not yet been developed. Health Care Services approved the software development approach in July 2014 with the understanding that Xerox would update the document on an ongoing basis and would address these concerns within 90 days. Xerox submitted a revised software development approach document in December 2014 that addressed many of these concerns, and Health Care Services is working with Xerox to prioritize and resolve the remaining concerns. However, the IV&V and IPO remain concerned that the current software development methodology documentation is not sufficiently detailed to effectively and consistently guide the complex development of Health Enterprise.

According to our IT expert, the insufficient documentation of the agile software development methodology poses several risks to the project. When individual development teams lack complete and consistent guidance, it can result in inefficiencies and rework that negatively impact the schedule and consume resources needlessly. In addition, lack of a consistent approach may result in the increased frequency and severity of lower quality work products. Furthermore, one of the roles of the IV&V is to verify Xerox's compliance with the approved software development methodology. However, when the software development methodology is not fully defined, it is difficult for the IV&V to monitor Xerox's performance on behalf of the State.

In addition, the IV&V and IPO have expressed concerns about the lack of a clearly documented enterprise architecture for the replacement system. Enterprise architecture should describe the structure of the new system and how it interfaces with other systems. In May 2012 the IV&V pointed out that the architecture plan under development did not include important information that would guide procurement, development, and engineering activities, nor did it include a time frame for delivering such content. More recently, in its status report for December 2014 the IV&V reported that the condition of the enterprise architecture poses a high risk to the project. For example, the IV&V indicated that the lack of architecture diagrams and narrative representing both the current legacy system (that is, the "as-is" system) and the system being developed is impacting the ability of Health Care Services and other stakeholders to make informed decisions as they carry out their management and oversight responsibilities for all phases of the system replacement project. In its December 2014 status report, the IPO stated that it agreed with the IV&V's findings related to the condition of the architecture documentation. According to the deputy director, Health Care Services and Xerox architecture teams are collaborating extensively to resolve the concerns of the IV&V and IPO regarding the enterprise architecture.

Furthermore, the IPO has reported difficulty in accurately assessing the system replacement schedule and tracking progress. In December 2014 the IPO reported that, based only on available data, it appeared unlikely that scheduled Release 2 work would be completed by June 2015. In response to this report, Health Care Services directed Xerox to provide the IPO with any missing data that it needed to accurately assess whether the work associated with the second major release would be completed by the June deadline. According to the deputy director, the project is also currently doing a better job capturing timely and accurate performance data in its agile tracking tool and believes that this addresses the IPO's concerns.

Finally, the IPO is concerned that the agile approach may result in the project deferring functionality to future releases. The agile approach emphasizes timely delivery of software products through mechanisms that allow functionality to be deferred. As an example, Release X might consist of 10 functions scheduled for delivery on September 1. This might be accomplished by delivering seven functions on time in Release X.0, delivering two functions later in release X.1, and deferring the final function to release X.2. The IPO has expressed concerns that, because the project has only created detailed descriptions of the functionality to be addressed in Release 1 and Release 2, it is unclear exactly when functionality deferred beyond those releases would be deployed, making conjecture about the accuracy of those future release schedules dubious.

To address these concerns, Health Care Services intends to hire a recognized industry leader in agile software development to conduct periodic assessments of the project's agile software development methodology and related processes. The deputy director expects that this vendor will also evaluate how those methodologies and processes compare to recognized industry best practices, and that it will provide relevant recommendations for improvement. She also stated that Xerox has developed a detailed description of the business functionality to be delivered by the Health Enterprise system, and that Health Care Services is working to amend its contract with Xerox to include 120 discrete pay points (deliverables that trigger payments to Xerox) that are tied to that functionality. The intent of this contract amendment is to ensure that Xerox is only paid for business functionality that it successfully delivers into production, which will mitigate any risk that Xerox would be paid prematurely for functionality that is deferred from one release to the next. Health Care Services' legal department is in the process of reviewing the contract amendment. Health Care Services is aiming to forward the revised contract to CalTech and the federal Centers for Medicare and Medicaid Services (CMS) by February 28, 2015, and it expects CMS to approve it within 90 days.

Although these are positive steps, the oversight bodies are raising significant concerns that must be addressed to increase the likelihood that Xerox will produce a timely and high quality replacement for CA-MMIS that meets the needs of the State and qualifies for CMS certification. We will continue to monitor the project's progress addressing the concerns of the IV&V and IPO.

Transition to the Agile Methodology and Increased Project Costs Required Health Care Services to Prepare a New Special Project Report

According to the deputy director, the delays that caused the project to transition to the agile software development methodology also increased total project costs by approximately \$21.1 million. Specifically, the project budget has increased by \$13 million for one-time costs for additional staff, overhead and equipment, and contracted services, and \$8.1 million for ongoing costs including operating costs for the current CA-MMIS legacy system. The terms of the existing special project report required Health Care Services to submit a revised report because the software development methodology has changed and costs are projected to increase by more than \$5 million. Health Care Services submitted its revised special project report to CalTech in January 2015 and the deputy director expects that CalTech will approve it by the end of February 2015.

Health Care Services also continues to incur ongoing costs related to the system replacement project. According to Health Care Services' project expenditure report, it is spending an average of nearly \$2.5 million per month in fiscal year 2014–15 on expenses related to the system replacement project, and has spent a total of \$40.8 million of its \$302.6 million system replacement budget, as of December 31, 2014. This includes Health Care Services' costs for staff dedicated to the system replacement project and other operating expenditures, costs for IV&V and IPO services, and other miscellaneous costs for contracted services. These costs are in addition to the \$14 million that Health Care Services expects to pay Xerox on average each month in fiscal year 2014–15 to operate the existing CA-MMIS. The federal government generally funds 90 percent of system replacement costs and 75 percent of CA-MMIS operating costs.

Xerox Continues to Experience Problems Implementing Medicaid Management Information Systems for Other States

As we reported in February 2014, Xerox has incurred substantial delays in implementing new Medicaid Management Information Systems (MMIS) in other states. The state of New Hampshire originally projected that its new MMIS would be completed by January 2008, but Xerox did not finish implementing the system until April 2013, more than five years later. The Xerox Senior Vice President responsible for overseeing the implementation of California's new Health Enterprise system expects CMS to begin its certification review of New Hampshire's new system in April 2015. Similarly, the state of Alaska anticipated that its new MMIS system would be completed by June 2010, but Xerox did not finish implementing the new system until October 2013, more than three years later. In September 2014, Alaska's Department of Health and Social Services filed a claim against Xerox asserting that Xerox violated its contract by failing to adequately implement a new MMIS system in a timely manner and for failing to issue timely and accurate payments to Medicaid providers. In addition, Alaska notified Xerox that it was assessing \$46.7 million in liquidated damages against Xerox in accordance with the contract terms.

Additionally, the state of North Dakota originally anticipated that its new MMIS would be completed by July 2009. At the time of our February 2014 report, Xerox had not finished implementing the system and North Dakota was projecting that it would be launched in the second quarter of 2014. However, the new system still has not been implemented and North Dakota's Department of Human Services plans to notify providers of the new implementation date when it is confident that the new system will meet critical business requirements. Moreover, Xerox continues to experience delays replacing the state of Montana's MMIS. As we reported in February 2014, Montana originally projected that its new MMIS would be implemented in March 2015, but the projected implementation date has now slipped to May 2017, a delay of more than two years. According to the December 2014 monthly IV&V status report, Xerox has missed deadlines for various deliverables, requested changes to the approved project workplan, and continued to experience turnover of its project staff, among other problems.

The continued delays and other problems encountered by these other states with much smaller Medicaid programs strongly suggest that Health Care Services has a high risk of experiencing more delays and problems before its new system is fully implemented. Health Enterprise is currently one of the State's largest and most complex information technology projects. Although delays that the State has experienced to date are not uncommon for projects of this size and complexity, Xerox's performance in other states demands continued vigilance over the development of Health Enterprise. Health Care Services, CalTech, and other stakeholders should monitor Xerox's progress carefully and consider available remedies if significant delays continue. We will also continue to monitor Xerox's progress in implementing the Health Enterprise system.

Recommendation

Health Care Services should ensure that Xerox addresses all IV&V and IPO concerns in a timely manner. In particular, Health Care Services should ensure that Xerox completes the agile system development methodology documentation and the architectural specifications

for Health Enterprise to the IV&V's and IPO's satisfaction by August 31, 2015. We believe this will allow the project sufficient time to adequately address these concerns without disrupting its efforts to develop and deliver Release 2 functionality in June 2015.

Respectfully submitted,



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State Auditor

Date: February 19, 2015

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