



DEPARTMENT OF VETERANS AFFAIRS  
**OFFICE OF INSPECTOR GENERAL**

*Office of Audits and Evaluations*

DEPARTMENT OF VETERANS AFFAIRS

VA's Implementation of the  
Veterans Information Systems  
and Technology Architecture  
Scheduling Enhancement  
Project Near Completion

AUDIT

REPORT #16-03597-171

AUGUST 20, 2019



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## Executive Summary

The VA Office of Inspector General (OIG) conducted this audit to determine whether the Office of Information and Technology (OIT) and the Veterans Health Administration (VHA) effectively managed the implementation of VA's Veterans Information Systems and Technology Architecture (VistA) Scheduling Enhancement (VSE) project. VA has struggled for almost two decades to replace its cumbersome and outdated medical appointment scheduling system. In May 2014, VA launched the VSE project to provide an interim solution for updating its legacy scheduling system to meet its needs, rather than acquiring or developing an entirely new system.

VistA was developed in the 1980s as an electronic health records (EHR) and appointment scheduling system. It was not designed to handle the complexities and volume of VHA's scheduling requirements as they developed and expanded over time, such as the integration of mobile, web, and telehealth scheduling. During fiscal year (FY) 2000, VHA determined that it needed to replace the aging VistA scheduling system with a commercial off-the-shelf (COTS) software program and launched the Replacement Scheduling Application (RSA) project.

In April 2002, VA realized that no COTS software developers appeared willing to make their scheduling application compatible with VA's systems. On April 5, 2002, the VHA chief information officer at the time significantly changed the scope of the project from a COTS solution to an in-house build of a scheduling application. Almost seven years later, a March 2009 memo from the under secretary for health to the acting assistant secretary for information and technology stated that the RSA project had not produced a single scheduling capability that the field could use, nor was there any expectation of delivering such capability soon. According to the memo, VHA failed to deliver a usable product and the contract for the RSA project was terminated. A Government Accountability Office May 2010 report found VA had spent an estimated \$127 million over nine years on its outpatient scheduling system project. The report found VA had not implemented any of the planned system's capabilities and was essentially starting over.<sup>1</sup>

### What the OIG Found

VA's VSE project management team, which included OIT program and project managers and VHA project managers, did not effectively manage the project to ensure scheduling enhancements were adequately developed and met users' needs. The audit team determined that VHA requirements for VSE were inadequate. The approved requirements specification documents were insufficient to help ensure the scheduling enhancements would meet VHA's needs. According to VHA's information technology project manager, OIT approved the national release and deployment of a version of VSE in April 2017. However, the OIG audit team found

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<sup>1</sup> *Management Improvements Are Essential to VA's Second Effort to Replace Its Outpatient Scheduling System*, May 2010, GAO-10-579.

delays in deployment persisted until the final contract modification for VSE ended in September 2017.

Six months after the VSE project was launched in November 2014, VA also issued a request for proposal for a newly designed Medical Appointment Scheduling System (MASS) that would serve as the long-term solution to replace the VistA scheduling system. Again, VSE was to serve as an interim solution only to provide temporary improvements to VistA scheduling while the acquisition of a long-term solution was pursued. In August 2015, VA awarded an indefinite-delivery, indefinite-quantity contract for MASS at a maximum cost of about \$624 million over a seven-year period. However, in April 2016 testimony to Congress, VA officials at the time stated they put MASS on hold while they continued with the development of VSE. This was because VSE project leaders decided that improvements planned as part of the VSE effort could be achieved at a much lower cost than MASS, with a faster implementation time frame, and result in an easier-to-use scheduling application with increased user satisfaction and reduced workload.

Then, in January 2017, the VA deputy secretary, who has since left the position, directed MASS pilot activities to be resumed with the requirement that MASS be ready to launch at a pilot site in July 2018. As of August 2018, VA had deployed the system upgrades at 157 of 160 VA medical facility locations according to a project analyst for OIT's Enterprise Portfolio Management Division.<sup>2</sup> In October 2018, the MASS scheduling portfolio program manager informed the OIG that the MASS solution—known as the Epic Cadence COTS product—was successfully deployed on April 9, 2018, at the Chalmers P. Wylie Ambulatory Care Center in Columbus, Ohio, ahead of the imposed deadline. According to the program manager, MASS was actively being used at the pilot site as OIT continued to gather metrics for a possible decision on the value of the Epic Cadence COTS through the end of calendar year 2018.

A December 20, 2018, report to Congress on medical appointment scheduling, signed by VA's acting associate deputy assistant secretary, indicated that the new Cerner contract includes an appointment scheduling system component that will be rolled out across VA in conjunction with the EHR system over a 10-year period. According to the MASS scheduling portfolio program manager, the specific plans to deploy a Cerner scheduling solution are being coordinated by VA's Office of Electronic Health Record Management. According to the report, committee members support implementing a single system with multiple functions, including appointment scheduling; however, some members were disturbed that some regions of the country may not benefit from the scheduling component for a decade.

Because of this, VA intends to separate the scheduling component within the EHR Cerner contract and implement it on a faster track. VA believes there is a return on investment in

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<sup>2</sup> According to the analyst, VHA granted two permanent implementation waivers for the Columbus (using MASS) and Indianapolis (implemented another commercial scheduling system about 15 years ago) VA medical centers. Also, the San Diego VA Medical Center remains partially implemented, with an approved VHA waiver, but plans to fully implement VSE "as is" by the end of FY 2019.

productivity and efficiency realized by accelerating the scheduling system component within the EHR contract. The first standalone scheduling component is tentatively planned for deployment in 2020 and the last deployment in 2023, according to the December 2018 report. However, with the decision for VA to go to a Cerner-based solution, the MASS scheduling portfolio program manager informed the OIG in April 2019 that the MASS project will no longer be deployed to other sites. The Cerner scheduling standalone plan will replace VSE, MASS, and the VistA scheduling system.

## **What the OIG Recommended**

The assistant secretary for information and technology and chief information officer should enforce current required project management processes with improved oversight to ensure project planning requirements are adequately defined and supported before starting information technology projects.

## **Management Comments**

The assistant secretary for information and technology and chief information officer concurred with the OIG recommendation and requested closure. To address the recommendation, the assistant secretary reported OIT is implementing a new program management review (PMR) process to ensure information technology programs and projects deliver and sustain the intended outcomes. According to the assistant secretary, through the PMR process, OIT's Office of Quality, Performance, and Risk/Chief Risk Officer independently tracks program status and reporting dashboards, as well as provides an overall, independent assessment of the health of OIT programs and investments. The assistant secretary also reported a memorandum implementing the PMR process has been finalized and is expected to be signed and issued by July 30, 2019. The OIG confirmed the memo was signed on July 15, 2019. According to OIT's director of the Project Coordination Service the memo was dispatched to their executive leadership team correspondence leads.

While the assistant secretary requested closure of the OIG recommendation, the OIG will monitor OIT's progress and follow up on the implementation of the policy memorandum for PMR to ensure it addresses the intent of the recommendation.



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## Abbreviations

COTS	commercial off-the-shelf
EHR	electronic health record
FY	fiscal year
HFE	Human Factors Engineering
IOC	initial operational capability
IT	information technology
MASS	Medical Appointment Scheduling System
OIG	Office of Inspector General
OIT	Office of Information and Technology
PMAS	Project Management Accountability System
PMR	program management review
RSA	Replacement Scheduling Application
VAMC	VA medical center
VHA	Veterans Health Administration
VISN	Veterans Integrated Service Network
VistA	Veterans Information Systems and Technology Architecture
VSE	VistA Scheduling Enhancement



## Introduction

The VA Office of Inspector General (OIG) conducted this audit to determine whether the Office of Information and Technology (OIT) and Veterans Health Administration (VHA) effectively managed the implementation of VA's Veterans Information Systems and Technology Architecture (VistA) Scheduling Enhancement (VSE) project.

VA needed to improve the efficiencies of the outpatient medical scheduling processes through improved visibility of information. To facilitate the transition to new business processes, VA required enhancements to its current VistA scheduling system. Specifically, in April 2016 testimony to Congress, VA officials at the time stated VSE would update the legacy command line scheduling application with a modern graphical user interface. This capability is intended to reduce the time it takes schedulers to enter new appointments and make it easier to see provider availability. VSE would provide critical, near-term enhancements, including the graphical user interface, aggregated facility views, profile scheduling grids, single queues for appointment requests, and resource management reporting. VA deployed VSE as a near-term solution to ensure veterans do not have to wait to obtain better access to care.

### Early Attempts to Replace VistA Scheduling System

VHA relied on the VistA system, developed in the 1980s, to make and track veterans' medical appointments. VistA was developed as an electronic health record system, which also had a medical appointment scheduling component. The technology underlying this legacy scheduling system used by VA medical facilities became cumbersome, outdated, and unable to handle the complexities and volume of VHA scheduling requirements as they developed and expanded over time. The scheduling system was also not designed to integrate mobile, web, and telehealth scheduling. During FY 2000, VHA determined there was a need to replace its VistA scheduling system due to the age of the software. VHA initiated action to replace the system with a commercial off-the-shelf (COTS) software program and launched the Replacement Scheduling Application (RSA) development project.

In April 2002, VA realized that no COTS software developers appeared willing to make their scheduling application compatible with VA's systems. On April 5, 2002, the VHA chief information officer at the time significantly changed the scope of the project from a COTS solution to an in-house build of a scheduling application. Almost seven years later, a March 2009 memo from the under secretary for health to the acting assistant secretary for information and technology stated that the RSA project had not produced a single scheduling capability that the field could use, nor was there any expectation of delivering such capability soon. According to the memo, VHA failed to deliver a usable product and the contract with the Southwest Research Institute for the RSA project was terminated. A May 2010 Government Accountability Office report found VA had spent an estimated \$127 million over nine years on its outpatient



scheduling system project. However, the report found VA had not implemented any of the planned system's capabilities and was essentially starting over.<sup>3</sup>

## Development of VSE

In 2011, after analyzing alternatives, VA decided to pursue another COTS solution that ultimately led to the development of the Medical Appointment Scheduling System (MASS). At the same time, VA was working on its strategic goal of mending its scheduling system under VistA Evolution, a joint VHA and OIT program designed to improve the efficiency and quality of veterans' health care. In May 2014, VHA and OIT realized that small enhancements to VA's VistA scheduling interface could be made to increase user satisfaction and reduce workload. This joint effort progressed into the in-house development of the VSE project that would update VHA's legacy scheduling system to meet its needs, rather than acquiring an entirely new system.

According to the health management products director for OIT, VA decided enhancements planned as part of VSE could be done for a much lower cost, with a faster implementation time frame, and result in an easier-to-use scheduling application. Again, VSE was to serve as an interim solution providing temporary improvements to VistA scheduling while the acquisition of a long-term solution, such as MASS, was being pursued. The project was launched in May 2014 and in July 2014 VA awarded a firm-fixed-price contract to contractor Hewlett Packard Enterprise Services, LLC, to design, develop, test, and support the release and implementation of VSE with a scheduled completion date of November 2015 and at a contract cost of about \$4.1 million. However, to accomplish this project, the total value of the contract increased from about \$4.1 million to \$6.8 million due to additional software development and enhancements and a post-warranty support extension.

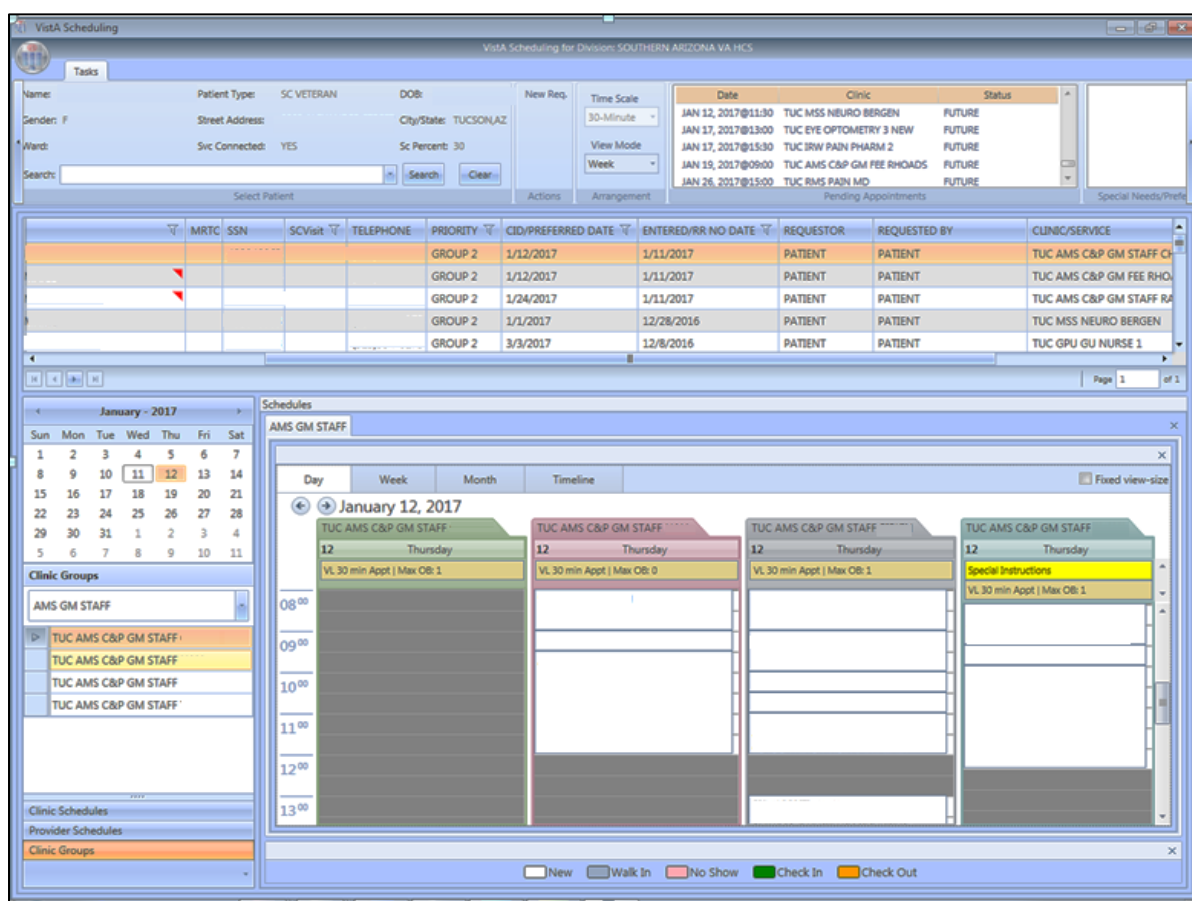
The contractor was also required to conduct its work in accordance with VA's Project Management Accountability System (PMAS) requirements. VA mandated the use of PMAS for all information technology (IT) development projects, whether the project created new functionality or enhanced existing capabilities within VA's current systems or infrastructure, and whether it was funded by the IT systems appropriation or any other appropriation. PMAS was VA's principal means of holding IT project managers accountable for meeting cost, schedule, and scope milestones. Also, PMAS was designed to reduce project implementation risks, institute monitoring and controls, establish accountability, and create a reporting discipline.

VSE was considered the scheduling solution that would update VA's legacy command line scheduling application with a modern graphical user interface; this interface would provide a consolidated view of clinic resources. Specifically, VSE would include enhancements such as an

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<sup>3</sup> Management Improvements Are Essential to VA's Second Effort to Replace Its Outpatient Scheduling System, May 2010, GAO-10-579.





**Figure 2.** VSE graphical user interface view

(Source: Supervisory program specialist, Southern Arizona VA Healthcare System)

Note: Figure 2 is the modernized VSE interface that shows the aggregated view of VistA clinic profile scheduling grids instead of the non-graphical command line operating system used by the DOS-based scheduling system in Figure 1.

## Development of MASS

In November 2014, six months after the VSE project was launched, VA also issued a request for proposal for a new scheduling system, MASS, to replace the VistA scheduling system. MASS was considered the long-term solution that leveraged a COTS product. According to a VA fact sheet, MASS would enable proactive, resource-management-based scheduling, which considers the availability of staff, facilities, and equipment while also providing improved transparency, and consistent implementation of scheduling policies and directives. In August 2015, VA awarded an indefinite-delivery, indefinite-quantity contract for MASS to Systems Made Simple Inc. at a maximum cost of about \$624 million over a seven-year period. In April 2016 testimony to Congress, VA officials at the time said they put MASS on hold while they continued with the development of VSE.

However, in January 2017, the deputy secretary, who has since left the position, directed that MASS pilot activities be resumed at Boise VA Medical Center (VAMC), with the requirement that MASS be used for scheduling veteran appointments at the center in July 2018. In October 2018, the MASS scheduling portfolio program manager told the OIG that the MASS solution—known as Epic Cadence COTS—had been successfully deployed on April 19, 2018, at the Chalmers P. Wylie Ambulatory Care Center in Columbus, Ohio, ahead of the imposed deadline. According to the same program manager, MASS was actively being used at the new pilot site as OIT gathered metrics for a possible decision on the value of the Epic Cadence COTS through the end of calendar year 2018.

A December 20, 2018, report to Congress on medical appointment scheduling, signed by VA's acting associate deputy assistant secretary, indicated that the new Cerner contract includes an appointment scheduling system component that will be rolled out across the VA in conjunction with the electronic health records (EHR) system over a 10-year period. According to the MASS scheduling portfolio program manager, the specific plans to deploy a Cerner scheduling solution are being coordinated by VA's Office of Electronic Health Record Management. According to the report, committee members support implementing a system with multiple functions, including appointment scheduling; however, they were disturbed that some regions of the country will not benefit from the scheduling component for a decade. Because of this, VA intends to separate the scheduling component within the Cerner EHR contract and implement it on a faster track. VA believes that there is a return on investment in productivity and efficiency realized by accelerating the scheduling system component within the EHR contract.

To mitigate the risks, VA will not begin the scheduling component deployments until after the full EHR implementation is achieved at two sites in Veterans Integrated Service Network 20. The first standalone scheduling component is tentatively planned for deployment in 2020 and the last deployment in 2023, according to the December 2018 report. However, with the decision for VA to go to a Cerner-based solution, the MASS scheduling portfolio program manager informed the OIG in April 2019 that the MASS project will no longer be deployed to other sites. The Cerner scheduling standalone plan will replace VSE, MASS, and the VistA scheduling system.

## Results and Recommendations

### **Finding: The VSE Project Was Not Effectively Managed to Ensure Scheduling Enhancements Were Adequately Developed and Met User Needs**

VA's VSE project management team, which included OIT program and project managers and VHA project managers, did not effectively manage the VSE project to ensure scheduling enhancements were adequately developed and met user needs. The audit team determined that VHA requirements for VSE were inadequate. The approved requirements specification documents were insufficient to help ensure scheduling enhancements would meet VHA's needs. According to a VHA information technology project manager, OIT approved the national release and deployment of a version of VSE in April 2017. However, the OIG audit team found delays in the deployment starting from the original contract that ended in July 2016. In August 2016, the deputy secretary at the time implemented a remediation plan for VSE to address usability issues which further delayed implementation. Delays in deployment persisted until the final contract modification ended in September 2017. As of August 2018, VA had deployed the VSE to 157 of 160 locations according to a project analyst for OIT's Enterprise Portfolio Management Division.<sup>5</sup>

### **What the OIG Did**

To determine whether VA effectively managed the implementation of the VSE project, the OIG interviewed project managers, contracting officers, contracting officer's representatives, OIT's program manager, and OIT and VHA staff associated with the VSE project. The OIG team also spoke with VHA schedulers at the Charles George VA Medical Center in Asheville, North Carolina (Asheville VAMC), and Southern Arizona VA Health Care System, and the business office supervisor of data management at the Washington, DC, VAMC, to learn how VSE was being used to schedule veteran appointments. The OIG team also analyzed project management documentation and financial data for the VSE project.

This finding discusses the following:

- VSE requirements were inadequate to help ensure scheduling enhancements would meet VHA needs.

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<sup>5</sup> According to a project analyst for OIT's Enterprise Portfolio Management Division, VHA granted two permanent implementation waivers for the Columbus (using MASS) and Indianapolis (implementing another commercial scheduling system about 15 years ago) VA medical centers. Also, the San Diego VA Medical Center remains partially implemented, with an approved VHA waiver, but plans to fully implement VSE "as is" by the end of FY 2019.

- Issues identified in initial operational capability (IOC) testing delayed VSE implementation.
- Project staff turnover may have affected implementation of VSE.
- VSE implementation is almost complete.

## **VSE Requirements Were Inadequate**

The four VSE scheduling enhancements included an aggregated view of clinic profile scheduling grids, a single queue for medical appointments requests, resource management reporting, and high priority/critical patches for VistA scheduling. VHA used high-level scheduling blueprints to create simple requirements for VSE, according to VHA's senior medical advisor for the Office of Veterans Access to Care and business sponsor.<sup>6</sup> The senior medical advisor also indicated that most of the team was working on MASS, with VSE a lower priority. The senior medical advisor said VA wanted a quick and simple "stopgap" or "backup" plan to MASS. In addition, VA leaders made an arbitrary decision to deploy VSE in a very short period, without a proper plan, according to VHA's chief information strategy officer. Further, he said, coordination was lacking, and VSE could not be deployed with the resources available.

According to the senior medical advisor, the simple requirements were provided to the contractor, HP Enterprise Services LLC. The contract required HP to translate and document all requirements into functionally and technically testable and traceable requirements. The contractor developed requirements specification documents for the VSE upgrades. The senior medical advisor validated and approved the requirements specification document for Enhancement 4; however, the OIG did not receive approval documentation for Enhancements 1, 2, or 3. The OIG concluded that the simple requirements based on the high-level scheduling blueprints were inadequate and may have led to an incomplete analysis by the contractor. They focused on the following areas:

- Enhancement 1 is an aggregated view of clinic profile scheduling grids to allow the user to view the resource's availability collectively and decrease the time it takes to match an available resource with the patient's request and improve the appointment scheduling process.
- Enhancement 2 is a single queue of appointment requests to consolidate information from multiple sources, so all patient requests are available collectively to be queried, filtered, and sorted to improve the appointment scheduling process.
- Enhancement 3 is a resource management dashboard that will display pertinent resource management metrics in a single view and enhance the ability for individual facilities and staff

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<sup>6</sup> According to PMAS, the business sponsor (customer/user) is responsible for determining requirements, monitoring and approving changes to those requirements, and accepting project increment deliverables. In addition, the sponsor is required to validate and approve all project requirements.



at various levels within VHA to measure and track supply, demand, and efficiency metrics related to outpatient scheduling operations.

- Enhancement 4 includes high priority/critical patches to the VistA scheduling system.

The OIG also concluded that the inadequacy of these requirements may have resulted in functionality and usability issues that contributed to scheduling needs not being met. One year after the IOC testing of the application began, VHA conducted a study of VSE to determine if usability issues existed, to provide suggested changes to the user interface, and to help determine future plans for the product.<sup>7</sup> The usability study found functional limitations, such as schedulers needing to toggle back and forth between VistA, VSE, and the computerized patient record system to create an appointment, and patient data not being updated in every location within VSE. The study concluded that VSE was not in a deployable state, with bugs and defects that needed to be addressed.

The schedulers interviewed by the audit team said working with the legacy VistA scheduling application was easier because VSE required extra steps to accomplish the same tasks. The audit team also found that the testing of VSE at IOC sites increased the amount of time schedulers needed to set veterans' appointments. When scheduling appointments for veterans, VHA schedulers had to use both the VSE interface and the legacy VistA application. As importantly, according to the chief information strategy officer, VSE would be unable to solve VA's problems related to tracking resources and availability. According to an independent study required by the Veterans Access, Choice, and Accountability Act of 2014, examples of resources include support staff, exam rooms, and equipment availability.<sup>8</sup>

## **Issues Identified in Initial Operating Capability Testing Delayed VSE Implementation**

The July 2014 contract for VSE included an optional task for contractor support of IOC testing. VHA exercised this option in August 2014. The task required the contractor to execute an implementation plan, prepare for contingencies during the release of software, and provide support of software deployment. In June 2015, VSE was installed for IOC testing at the Asheville VAMC and at several of its clinics later in January 2016. Testing issues were reported prior to the Human Factors Engineering (HFE) team's usability study, according to VHA's HFE team. For example, user complaints indicated that it took twice as long to schedule patients using VSE as it did using the legacy system.

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<sup>7</sup> IOC testing is conducted in a cycle within a project schedule for complex projects. These tests assess system features and functionality.

<sup>8</sup> McKinsey & Company Inc. prepared the study for VA titled "A Product of the CMS Alliance to Modernize Healthcare Federally Funded Research and Development Center Centers for Medicare & Medicaid Services."

In addition to the identified testing issues, the HFE team also pointed out the lack of rigorous testing of VSE by other facilities in actual clinic use. In June 2016, because of the user complaints, VHA's Office of Connected Care sponsored a usability study of VSE at the Asheville VAMC. According to the director of the Asheville VAMC, they stopped testing VSE in July 2016 because of multiple problems they were having with the application. Despite these identified problems, the audit team found no information that any efforts were made by VHA or the contractor to coordinate with Asheville VAMC to develop a resolution plan, as required by the contract. According to the HFE team, the Asheville VAMC identified testing issues prior to the HFE usability study conducted one year after VSE was installed for IOC testing. The HFE team's objective was to investigate reported slowness of VSE and determine if VSE met basic usability requirements. In July 2016, HFE issued a report identifying 32 deficiencies associated with usability, software stability, limited functionality, technology, training, and patient safety issues. Twenty-six were related to functionality and six to training. Three of the 26 deficiencies were related to functions that were not delivered by the contractor as required.

Furthermore, the OIG team found that 23 functionality deficiencies should have been considered in the original contract requirements but were not. For example, the HFE usability study found that new appointments for veterans were not replicated across the interface grids and that comments placed in VSE were not being captured. In addition, some of the usability deficiencies included limitations on canceling and changing appointments while software instability plagued the overall deployment of the VSE project. Moreover, according to schedulers from the Asheville and the Southern Arizona VA Healthcare System IOC sites interviewed by the audit team, VSE was a source of frustration because of unresolved interface and functionality issues. Had the requirements been analyzed adequately, the OIG determined there could have been a contract with better defined requirements from the start, minimizing these types of findings from the HFE usability study and overall issues that schedulers reported plagued VSE.

In August 2016, the deputy secretary issued a memo discussing the remediation plan for VSE and the need to address the HFE-identified deficiencies. The remediation plan required the VSE development team to standardize the current version of VSE (v1.0) at five VAMCs: Asheville, North Carolina; Salt Lake City, Utah; Cleveland, Ohio; Hudson Valley, New York; and Chillicothe, Ohio. The plan also required the team to fix the identified issues in VSE and deliver up to two additional versions (v1.1 and v1.2) within six months. Remediation efforts created additional development work, which further delayed implementation of VSE. Even then, however, not all deficiencies were properly addressed during the remediation period.

## **Project Staff Turnover May Have Affected Implementation**

OIT and VHA did not have continuity in its management of the VSE project. During the development of VSE (2014–2017), key management and VSE project officials changed frequently. More specifically, OIT's program manager for VSE changed four times between May 2014 and May 2017. OIT's project manager, who was also responsible for contracting



officer's representative duties, changed three times before being turned over to a VHA project manager within the same period. Furthermore, the chief information strategy officer, who was responsible for overseeing the remediation period and ensuring successful coordination between OIT and VHA during the critical redevelopment period, release, and implementation of VSE, left VA and was replaced in November 2016. The audit team determined the frequent staff turnover in these key management positions could have impacted OIT's and VHA's ability to complete the VSE project in a timely manner.

The loss of project and program knowledge may have delayed the development and implementation of VSE. For example, project managers are responsible for managing the project and delivering expected outcomes on time and within budget, raising risks and issues that could impact project success or that require management intervention, and determining when the next segment of project delivery will be ready to start. Furthermore, staff changes could lead to an ongoing need to retrain, conduct additional project planning and specification reviews, and build working relationships. The audit team also found VHA encountered difficulty in staffing other positions critical to the VSE project. According to VHA and OIT oversight briefings, personnel needed for the project included business analysts, scrum masters, technical leads, testing managers, and configuration managers.<sup>9</sup> VA's solution to these staffing concerns was to use contract employees and resources from the MITRE Corporation.<sup>10</sup>

## **VSE Implementation Is Almost Complete**

Delays in deployment began in July 2016 when all enhancements should have been completed and lasted until the final contract modification ended in September 2017—more than one year after the contract end date. According to the VHA project manager, OIT approved the national release and deployment of a version of VSE in April 2017. In May 2017, the VSE project manager told the audit team that no future developments were scheduled, and they would only focus on the sustainment of VSE. Therefore, the 23 additional functionality requirements found by the HFE usability study were not addressed. However, in December 2017, the VSE project manager told the audit team that new requirements would be completed under a new project called "Sustainment of VSE."<sup>11</sup> In February 2018, the VSE project manager told the audit team the three original requirements from the initial contract were completed as of December 2017. However, the manager did not address the 23 still outstanding functionality issues identified by the HFE usability study.

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<sup>9</sup> A scrum master is the facilitator for an agile development team. Scrum is a methodology that allows a team to self-organize and make changes quickly, in accordance with agile principles.

<sup>10</sup> The MITRE Corporation is a not-for-profit company that operates multiple federally funded research and development centers.

<sup>11</sup> The OIG did not review the requirements under the new sustainment project called Sustainment of VSE.

## Conclusion

OIT program and project managers and VHA project managers did not effectively manage the VSE project to ensure scheduling enhancements were adequately developed and met user needs. The VSE project suffered from insufficient requirements planning and inadequate initial testing when deployed at IOC sites. This contributed to a significant delay in national deployment. Furthermore, VHA's need to conduct a usability study for VSE one year after IOC testing of the application began because of the functional limitations not considered during the requirements planning.

## Recommendation

The assistant secretary for information and technology and chief information officer should enforce current required project management processes with improved oversight that will ensure project planning requirements are adequately defined and supported before starting information technology projects.

## Management Comments

The assistant secretary for information and technology and chief information officer concurred with the OIG recommendation and requested closure. To address the recommendation, the assistant secretary reported OIT is implementing a new program management review (PMR) process to ensure information technology programs and projects deliver and sustain the intended outcomes. According to the assistant secretary, through the PMR process, OIT's Office of Quality, Performance, and Risk/Chief Risk Officer independently tracks program status and reporting dashboards, as well as provides an overall, independent assessment of the health of OIT programs and investments.

The assistant secretary also reported a memorandum implementing the PMR process has been finalized and is expected to be signed and issued by July 30, 2019. The OIG confirmed the memo was signed on July 15, 2019. According to OIT's director of the Project Coordination Service, the memo was dispatched to their executive leadership team correspondence leads. The assistant secretary reported OIT's Office of Quality, Performance, and Risk has begun its assessments of IT projects through use of lightweight independent technical assessments. These assessments provide an independent technical assessment of underperforming or mission-critical programs and projects with respect to the Veteran-focused Integration Process and Agile framework compliance and risk identification, mitigation, and avoidance.<sup>12</sup>

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<sup>12</sup> The Veteran-focused Integration Process is a Lean-Agile framework utilized for all VA IT development, operations and maintenance, infrastructure, and enterprise solution projects and products, regardless of funding source.

## **OIG Response**

The assistant secretary for information technology and chief information officer's planned corrective actions are responsive to the intent of the recommendation. While the assistant secretary requested closure of the OIG recommendation, the OIG will monitor OIT's progress and follow up on the implementation of the policy memorandum for PMR to ensure it addresses the intent of the recommendation. Appendix B provides the full text of the comments from the assistant secretary.

## **Appendix A: Scope and Methodology**

### **Scope**

The OIG conducted this audit from July 2016 through June 2019. The audit focused on reviewing VHA and OIT processes for the development and oversight of VSE during the project lifecycle period of May 2014 through April 2017. This information included the available documents from project inception through the approved national release date for VSE. In addition, the audit team reviewed events related to the development of MASS, which was restarted while VSE was undergoing redevelopment and remediation.

### **Methodology**

To accomplish the audit objectives, the OIG conducted site visits at the Washington, DC VAMC and the Southern Arizona VA Health Care System. The OIG interviewed VHA project managers, contracting officials, contracting officers' representatives, OIT's program manager, and OIT and VHA staff associated with the VSE project. In addition, the OIG evaluated VA policies, procedures, and industry standards related to software development and project management. The OIG also reviewed available project management documentation and financial data for the VSE project. Furthermore, the OIG interviewed schedulers at the Asheville, North Carolina, and the Southern Arizona VA Health Care System, and the business office supervisor of data management at the Washington, DC VAMC to gain an understanding of how VSE was being used to schedule veteran appointments.

### **Fraud Assessment**

The audit team assessed the risk that fraud, violations of legal and regulatory requirements, and abuse could occur during the audit. The team exercised due diligence in staying alert to any potential fraud. The OIG did not identify instances of fraud during this audit.

### **Data Reliability**

The OIG obtained electronic spreadsheets that contained invoice and payment data associated with the VSE project but found the data were not reliable because the team was unable to trace the payment data contained in the spreadsheets to supporting documentation. Therefore, the data from the electronic spreadsheets containing invoice and payment data were not used to support the OIG's findings, conclusions, or recommendations in the audit report.

## **Government Standards**

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

## Appendix B: Management Comments

### Department of Veterans Affairs Memorandum

Date: July 17, 2019

From: Assistant Secretary for Information and Technology, Chief Information Officer (005)

Subj: Draft Report - *Audit of VA's Implementation of the Veterans Information Systems and Technology Architecture Scheduling Enhancement (VSE) Project Near Completion* (Project 2016-03597-DV-0156)

To: Assistant Inspector General for Audits and Evaluations (52)

Thank you for the opportunity to review the Office of Inspector General (OIG) draft report, *Audit of VA's Implementation of the VSE Project* (Project 2016-03597-DV-0156). The Office of Information and Technology concurs with the OIG's findings and submits the attached written comments in response to the OIG's recommendation. Should you have any questions regarding OIT's comments, please contact Martha Orr, Deputy Chief Information Officer for Quality, Performance, and Risk at (202) 461-5139.

(Original signed by)

James P. Gfrerer

Attachment

*For accessibility, the original format of this appendix has been modified to comply with Section 508 of the Rehabilitation Act of 1973, as amended.*

## 005 Attachment

### Office of Information and Technology

#### Comments on OIG Draft Report,

##### *Audit of VA's Implementation of the VSE Project*

OIG Recommendation 1: *The Assistant Secretary for the Office of Information and Technology should enforce current required project management processes with improved oversight that will ensure project planning requirements are adequately defined and supported before starting information technology projects.*

#### **OIT Comments:** Concur.

VA's Office of Information and Technology (OIT) continually strives to improve project management effectiveness and efficiency. In October 2016, OIT transitioned from the Project Management Accountability System (PMAS) to the Veteran-focused Integration Process (VIP), a Lean-Agile framework utilized for all VA IT development, operations and maintenance, infrastructure, and enterprise solution projects and products, regardless of funding source. VIP enhances the ability to track and monitor IT performance and strengthens management oversight and accountability. Specifically, VIP reinforces the importance of requirements, with mandatory Epics (i.e. high-level requirements that capture the largest crosscutting initiatives within a portfolio and directly deliver business value) from areas such as business, cloud, technical, and security defined prior to any development and Critical Decision 1. VIP also provides direction to deliver on more regular intervals (every 3 months) to ensure issues such as those described in the OIG report are caught and corrected earlier in the project lifecycle. VIP User Guide 3.2 (attached) outlines VIP requirements. Please reference Section 2.2 for a discussion of Epics in the project initiation phase, and Section 2.4.4 for discussion of the 3-month deliverable requirement.

OIT is also implementing a new Program Management Review (PMR) process to ensure IT programs and projects deliver and sustain the intended outcomes. Through the PMR process, OIT's Office of Quality, Performance, and Risk (QPR)/ Chief Risk Officer independently tracks program status and reporting dashboards, as well as providing an overall, independent assessment of the health of OIT programs and investments. The PMR process will provide early detection of issues, potential corrective actions, and changes to the original goals and milestones needed to complete the investment and necessary for agency portfolio analysis decisions. Investments or programs identified as underperforming shall be reviewed by the Program and Acquisition Review Council within OIT's Governance Framework. A Chief Information Officer (CIO) memorandum formally implementing the new PMR process has been finalized and is expected to be signed and dispatched by July 30, 2019.

Using the requirements in the CIO memorandum and the US Chief Information Officer 25 Point Implementation Plan to Reform Federal IT (2010), QPR has begun its assessments of IT projects through use of Lightweight Independent Technical Assessments (LITA). LITA provide an independent technical assessment of underperforming or mission critical program and projects with respect to VIP and Agile framework compliance and risk identification, mitigation, and avoidance. Any issues concerning quality and risk are identified and recommendations to remedy or mitigate are provided.

OIT recommends the recommendation be closed based on the information provided above.

## OIG Contact and Staff Acknowledgments

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<b>Contact</b>	For more information about this report, please contact the Office of Inspector General at (202) 461-4720.
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<b>Audit Team</b>	Al Tate, Director Barbara Ferris Elijah Hancock Brandon Parrinello Robert Skaggs Adam Sowell
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