



DEPARTMENT OF VETERANS AFFAIRS OFFICE OF INSPECTOR GENERAL

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BEFORE THE
SUBCOMMITTEE ON TECHNOLOGY MODERNIZATION
COMMITTEE ON VETERANS' AFFAIRS
U.S. HOUSE OF REPRESENTATIVES

HEARING ON

THE FUTURE OF VA SCHEDULING: IMPLEMENTING A COMMERCIAL OFF-THE-SHELF
SCHEDULING SOLUTION AT THE DEPARTMENT OF VETERANS' AFFAIRS
SEPTEMBER 26, 2019

Chairwoman Lee, Ranking Member Banks, and members of the Subcommittee, thank you for the opportunity to discuss the Office of Inspector General's (OIG's) oversight of the Department of Veterans Affairs medical scheduling enhancement efforts. The OIG is committed to serving veterans and the public by conducting oversight of VA programs and operations through independent audits, inspections, reviews, and investigations. Ensuring veterans have timely access to quality care is a top priority and can only be accomplished through accurate and efficient scheduling systems.

In August 2019, the OIG published the report, *VA's Implementation of the Veterans Information Systems and Technology Architecture Scheduling Enhancement Project Near Completion*.¹ This audit detailed how the Office of Information and Technology (OIT) and the Veterans Health Administration (VHA) managed the implementation of VA's Veterans Information Systems and Technology Architecture (VistA) Scheduling Enhancement (VSE) project. The OIG determined that the 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.

¹ *VA's Implementation of the Veterans Information Systems and Technology Architecture Scheduling Enhancement Project Near Completion, August 20, 2019.*

BACKGROUND

VistA was designed as an electronic health record system with a scheduling component. Since the 1980s, VHA has relied on the VistA system to make and track patient medical appointments. The technology underlying this legacy scheduling system that is used by VA medical facilities became cumbersome, outdated, and unable to handle the complexities and volume of VHA scheduling requirements as they developed and expanded over time.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. In fiscal year (FY) 2000, VHA determined that VistA should be replaced and launched the Replacement Scheduling Application (RSA) project to look for a commercial off-the-shelf (COTS) software program as a solution. In April 2002, VA determined that no COTS software developers were willing to make their scheduling application compatible with VA's systems. The VHA chief information officer at that time decided to significantly change the scope of the project from a COTS solution to an in-house build of the scheduling application. In March 2009, a 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 VA could use, nor was there an expectation that one would be made available. In May 2010, the Government Accountability Office reported that VA spent an estimated \$127 million over nine years on its outpatient scheduling system project and found that it did not implement any of the planned system's capabilities and was essentially starting over.²

Development of VSE

In 2011, after analyzing alternatives, VA decided to pursue another COTS solution that led to the development of the Medical Appointment Scheduling System (MASS). Simultaneously, 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 2014, VHA and OIT realized that small enhancements to the VistA scheduling interface could not only be made to meet its needs, but also could be done at a much lower cost and with faster implementation than acquiring a new system. This joint effort progressed into the in-house development of the VSE project, as a temporary solution while MASS was being pursued.

In May 2014, the VSE project was launched 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 cost of \$4.1 million and a completion date of November 2015.

Ultimately, the cost increased to \$6.8 million due to additional software development, enhancements, and a post-warranty support extension.

² Government Accountability Office, *Management Improvements Are Essential to VA's Second Effort to Replace Its Outpatient Scheduling System*, GAO-10-579, May 27, 2010.

VSE was expected to update VA's legacy system with a modern graphical user interface that resembles what a user might see on a Microsoft Outlook calendar, while not changing any of the functionality of the VistA scheduling system. Specifically, VSE would include enhancements such as an aggregated view of clinic profile scheduling grids, a single queue or list for appointment requests, resource management reporting, and high priority or critical patches to the VistA scheduling system.³ VSE was anticipated to reduce the time schedulers took to enter new appointments by making it easier to see care provider availability and appointment details.

Development of MASS

In November 2014, VA issued a request for proposals for the new longer-term scheduling system, MASS, to replace the VistA scheduling system. 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. During an April 2016 congressional hearing, VA officials at the time stated that MASS was put on hold while VSE was being developed. However, in January 2017, the deputy secretary at that time directed that MASS pilot activities resume at the Boise VA Medical Center (VAMC) in Idaho, with the requirement that MASS would be used for scheduling veteran appointments at the center by July 2018. In April 2018, MASS had been successfully deployed at the Chalmers P. Wylie Ambulatory Care Center in Columbus, Ohio, ahead of schedule.

In December 2018, VA reported to Congress on medical appointment scheduling 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 system over a 10-year period. Cerner scheduling solutions are being coordinated by VA's Office of Electronic Health Record Management. Due to concerns about the length of implementation time for the Cerner electronic health records system across VA, the Department intends to separate the scheduling component within the Cerner contract and implement it on a faster track to benefit all regions of the country. To mitigate the risks, VA will not begin the scheduling component deployments until after the full electronic health records system implementation is achieved at two sites in the VA Northwest Health Network.⁴ The first standalone scheduling component is planned for deployment in 2020 and the last deployment is planned in 2023, according to the December 2018 report. However, with the decision for VA to go to a Cerner-based solution, the

³ VHA requires 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.

⁴ The VA Northwest Health Network (Veterans Integrated Service Network 20) facilities are the initial operating capability sites for implementation of the new electronic health records system.

MASS project will no longer be deployed to other sites. The Cerner scheduling standalone component will replace VSE, MASS, and the VistA scheduling system.

INADEQUATE VSE PROJECT MANAGEMENT OF DEPLOYMENT AND IMPLEMENTATION

The OIG determined the VSE project team did not adequately manage the development of the scheduling system due to deficient requirements, insufficient testing and staff turnover. OIT approved the national release and deployment of a version of VSE in April 2017. VSE suffered delays from its original contract that ended in July 2016. In August 2016, the deputy secretary at that time implemented a remediation plan for VSE to address usability issues that 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.⁵

VSE Requirements Were Inadequate

The audit team was told that 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, who was the project's business sponsor.⁶ The senior medical advisor also indicated that VA wanted a quick and simple "stopgap" or "backup" plan to MASS. The business sponsor also stated that MASS was the focus of most of the team and VSE was a low priority. According to the business sponsor, the VSE was supposed to address four enhancements:

1. An aggregated view of clinic profile scheduling grids
2. A single queue for medical appointment requests
3. Resource management reporting dashboard
4. High priority/critical patches for VistA scheduling

The simple requirements were provided to the contractor and the business sponsor validated and approved the requirements for the high priority/critical patches. However, the OIG did not receive approval documentation for the other enhancements. Thus, the audit team concluded that the simple requirements were inadequate and may have led to an incomplete analysis by the contractor.

⁵ According to a project analyst for OIT's Enterprise Portfolio Management Division, VHA granted two permanent implementation waivers for the VA medical centers in Columbus (using MASS) and Indianapolis (implementing another commercial scheduling system about 15 years ago). 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.

⁶ The business sponsor, or customer/user, is responsible for determining requirements, monitoring and approving changes to those requirements, and accepting project increment deliverables. The business sponsor is also required to validate and approve all project requirements.

One year after the initial operating capability testing, 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.⁷ 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 was 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. This increased the amount of time schedulers needed to set veteran's appointments and it was determined that 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.⁸

Issues Identified in Initial Operating Capability Testing Delayed VSE Implementation

The July 2014 contract for VSE included an optional task for contractor support of initial operational capability testing, which was exercised by VHA 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 initial operational capability testing at the Charles George VA Medical Center in Asheville, North Carolina, and at several of its clinics later in January 2016. According to VHA's Human Factors Engineering (HFE) team, testing issues were reported prior to its usability study, such as scheduling appointments through VSE took twice as long as using the legacy system.⁹ Despite these identified problems, the audit team found no information that any efforts were made by VHA or the contractor to coordinate with the Asheville medical center to develop a resolution plan, as required by the contract. In July 2016, the Asheville VA Medical Center stopped testing VSE due to the identified problems.

In July 2016, the HFE team 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. Twenty-three functionality deficiencies should have been considered in the original contract requirements but were not. Some identified deficiencies included new appointments for veterans that were not replicated across the interface grids and comments placed in VSE were not being captured. In addition, usability deficiencies included limitations on canceling and changing appointments while software instability plagued the overall deployment of the

⁷ *Initial operational capability testing is conducted in a cycle within a project schedule for complex projects. These tests assess system features and functionality.*

⁸ *P. L. No. 113-146 (August 7, 2014); McKinsey & Company Inc. A Product of the CMS Alliance to Modernize Healthcare Federally Funded Research and Development Center Centers for Medicare & Medicaid Services. Prepared for VA.*

⁹ The HFE is a VHA office that conducts reviews of software to determine deficiencies and areas of improvement from the aspect of the system user.

VSE project. Had the requirements been analyzed adequately, the OIG determined there could have been a contract with better defined requirements for VSE from the start, minimizing the types of problems identified in the HFE usability study and those that schedulers reported plagued the system. In August 2016, the deputy secretary at that time 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 at five VA medical centers: Asheville, North Carolina; Salt Lake City, Utah; Cleveland, Ohio; Hudson Valley, New York; and Chillicothe, Ohio. The plan also required that the team fixed identified issues in VSE and deliver up to two additional versions within six months. Remediation efforts created additional development work, which further delayed implementation of VSE, and still did not address all deficiencies.

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 from 2014 to 2017, key managers and VSE project officials changed frequently. OIT's program manager 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 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. The audit team also found that VHA encountered difficulty in staffing other positions critical to the VSE project. According to OIT and VHA oversight briefings, personnel needed for the project included business analysts, scrum masters, technical leads, testing managers, and configuration managers.¹⁰ VA's solution to these staffing concerns was to use contract employees and resources from the MITRE Corporation.¹¹

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. According to the VHA project manager, OIT approved the national release and deployment of a version of VSE in April 2017. In May 2017, VSE project manager told the audit team that no future developments were scheduled, and they would be only focused on the sustainment of VSE. Therefore, the 23 additional functionality

¹⁰ 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.

¹¹ The MITRE Corporation is a not-for-profit company that operates multiple federally funded research and development centers.

requirements found by the HFE usability study were not addressed. Starting in December 2017, any new requirements would be completed under a new project called Sustainment of VSE. 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 outstanding functionality issues identified by the HFE usability study.

Recommendation

The OIG made one recommendation that the VA assistant secretary for information and technology and chief information officer should enforce current required project management processes with improved oversight. This should be executed to ensure project planning requirements are adequately defined and supported before starting information technology projects. At the time the OIG report was published, the VA assistant secretary for information and technology and chief information officer concurred with the recommendation and requested closure, as it has implemented a new program management review process through a policy memorandum signed on July 15, 2019. The program management review process is designed to ensure information technology programs and projects are delivered and sustain the intended outcomes. This memorandum has been distributed to executive leadership team correspondence leads. OIT's Office of Quality, Performance, and Risk has begun its assessment of information technology projects through the use of lightweight independent technical assessments. The OIG will monitor OIT's progress and follow up on the implementation of the policy memorandum to ensure it addresses the intent of the recommendation.

CONCLUSION

Patient scheduling is critical to providing veterans with timely access to medical care. The need to update the scheduling component of VistA is instrumental to VA's efforts to achieve that goal. Although VSE is a relatively small program and represented a short-term fix, it only changed the look of screens. This seemingly small change was expected to significantly reduce the time it took schedulers to schedule appointments, however it failed to deliver on that promise and it cost over \$6 million. This is another example of the struggles VA has in developing and managing information technology projects due to inadequate requirements, insufficient testing, and staff turnover. Having an effective program and project management structure in place is essential to its information technology efforts.

Chairwoman Lee, Ranking Member Banks and members of the Subcommittee, this concludes my statement. I would be happy to answer any questions.