

**STATEMENT OF PAUL TIBBITS  
EXECUTIVE DIRECTOR, TECHNICAL INTEGRATION  
OFFICE OF INFORMATION AND TECHNOLOGY  
DEPARTMENT OF VETERANS AFFAIRS  
HOUSE COMMITTEE ON VETERANS' AFFAIRS  
SUBCOMMITTEE ON TECHNOLOGY MODERNIZATION  
JULY 25, 2019**

**INTRODUCTION**

Good morning Chairwoman Lee, Ranking Member Banks, and distinguished Members of the Subcommittee. Thank you for the opportunity to testify today about the Department of Veterans Affairs' (VA) IT modernization efforts, including the Electronic Health Record Modernization (EHRM) initiative and the Veterans Health Information Systems and Technology Architecture (VistA): the system at the center of that effort. I am accompanied today by Charles C. Hume, Assistant Deputy Under Secretary for Health Informatics, Veterans Health Administration; John Short, Chief Technology and Integration Officer, Office of Electronic Health Record Modernization; and Dr. Thomas O'Toole, Senior Medical Advisor, Office of the Assistant Deputy Undersecretary for Health for Clinical Operations, Veterans Health Administration.

**OVERVIEW**

VA is committed to providing exceptional care, services, and a seamless, unified experience to our Veterans. The Office of Information and Technology (OIT) collaborates with various VA offices to achieve this mission through the delivery of state-of-the-art technology, including a modernized Electronic Health Record (EHR).

VA was an early pioneer of the EHR. We developed VistA to support the clinical, administrative, and financial operations of the Veterans Health Administration (VHA). Today, VistA and its integrated systems provide an integrated EHR for Veteran care and services. It supports over 150 applications, including the operations of more than 1,500 VA facilities, from small outpatient clinics to large VA Medical Centers (VAMC). There are 130 unique instances of VistA nationwide at four Regional data centers, apart

from Manila which has an onsite instance. Each of the 130 VistA instances share a standard core of functionality but are customized to each VAMC's needs and patient population. VistA is also enhanced by many third-party commercial off-the-shelf (COTS) products which further customizes the environment. One instance of VistA, at Valley Coastal Bend, was successfully migrated to the cloud on June 22, 2019, which is the future direction for VistA instance maintenance until they are subsumed by Cerner Millennium.

Like any IT system, VistA requires updates and maintenance to keep it functioning at a high level. Critical upgrades to the system could be extremely costly over the years, and maintenance costs are even higher. Often, it becomes more expensive to maintain a legacy system than to replace it.

VistA has served VA and Veterans well, but after nearly 40 years in operation, we are also aware of its limitations. It does not possess the modern capabilities, analytics, and functionalities that medical providers and Veterans expect and deserve. It is not interoperable with other Federal records systems, including those at the Department of Defense (DoD) which contain the health information of Servicemembers who will eventually enter our system as Veterans. Instead, VA staff must use a separate viewer to see DoD's data and yet another system to provide allergen and medication alerts to VistA.

To modernize VA's legacy EHR systems and achieve interoperability with DoD and community care providers, VA decided to transition to a new EHR solution. In May 2018, VA awarded Cerner a contract to replace VistA with a COTS solution, Cerner Millennium, which is also currently being deployed by DoD.

VA is working with Cerner to achieve Initial Operating Capability (IOC) in the Pacific Northwest, where DoD has already deployed the MHS GENESIS system, which is at its core, Cerner Millennium. Beginning in Spring 2020, VA will deploy its new EHR solution in that region. Through the IOC period, VA will maximize efficiencies by building upon lessons learned from DoD. VA will then deploy its new EHR solution across the VA enterprise. During implementation of the new EHR solution, VA will need to maintain VistA systems for a period of time. This ensures that current patient records remain accessible and that there will be no interruption in the delivery of quality care.

Keep in mind the Pacific Northwest region is only a small fraction of the VistA ecosystem. Instances occur across the country and it's even more important during the pre-deployment reviews that VA identifies the unique differences to effectively reach IOC on schedule. OIT has completed infrastructure readiness assessments for the IOC sites. More importantly, VistA is not only an EHR system; it is a complex system more like an Enterprise Resource Planning (ERP) with a variety of capabilities and functionalities, including financial, administrative, and supply chain management functions. It supports not only VHA but may be used by the Veterans Benefits Administration (VBA) and the National Cemetery Administration (NCA).

#### FACILITIES USE OF VISTA DURING EHRM

For the aforementioned reason, VA can only fully retire VistA when every capability and functionality used by a facility is replaced by a modernized replacement system, whether by Cerner or additional systems.

During the transition to VA's new EHR solution, VA facilities will continue to use their instance of VistA. VA is undertaking several concurrent modernization projects such as the following:

- Defense Medical Logistics Standard Support (DMLSS), a system that will manage all VHA supply chain functionality except for pharmacy, patient specific prosthetics, and possibly IT equipment; and
- Financial Management Business Transformation (FMBT), which will replace VA's current Financial Management System.

#### COSTS OF SUSTAINMENT

For the purposes of ensuring uninterrupted health care delivery, VA will continue to use VistA until all legacy systems are replaced by the new solution. It currently costs VA \$426 million to sustain VistA through Fiscal Year (FY) 2019 based on the GAO-19-125 report. VA is developing projected sustainment costs over the course of VA's new EHR solution implementation.

Currently, there is no VistA sustainment cost reduction directly tied to the new EHR solution rollout. VistA is expected to run without service degradation until all

VAMCs have been migrated to the new EHR solution, at which time the redundant VistA modules will be decommissioned. VistA modules that are not replaced by the new solution will be maintained until replacement capabilities are developed. The cost to maintain VistA will increase as we must include development for new capabilities and interfaces, Congressional mandates, cloud costs, hiring and retention of VistA support resources, and maintenance. The estimated minimum cost for VistA during this 10-year transition period is \$4.89 billion, not including any required development. VA is currently developing a methodology to update the cost data and thereby define VistA, which was also a recommendation by GAO in a recent draft report.

### LONG-TERM STRATEGY FOR SUSTAINMENT

VA is constantly looking for more efficient ways to sustain VistA throughout the course of the EHRM effort. The following are some of the key strategies:

- Development Operations Approach - OIT is shifting to a DevOps approach focused on collaboration, innovation, Agile principles, and automation—so that it can develop, enhance, maintain, and roll out better products at a faster pace than using the existing separate development and operations processes.
- VistA Standardization – VAMCs will be required to run the nationally released “Gold” version of VistA. A waiver process will allow for critical modifications. In addition to having a common set of software routines for each VistA instance, there are some additional normalization activities that includes the work on terminology extensions to account for local differences and others that will need to be addressed to ensure complete standardization of as much of the VistA database/file system as possible. VA’s goal is for all VistA instances to be standardized.
- Merging Resources – OIT is merging VistA teams and resources for maximum efficiency throughout OIT.
- Maintain excellent customer support – Responding to patient safety issues; hiring and retention of VistA support resources; maintaining security and compliancy (scans and remediation, 508, ATO, etc.); refreshing hardware (life-cycle upgrade,

hardware, cloud etc.); maintaining software versions/upgrades; decommissioning of VistA products as appropriate.

- Office of Technical Integration (OTI) – OTI facilitates communication and planning between OIT and various program offices that are implementing the systems that will replace VistA. OTI will track and report progress from these program offices, facilitate real-time conflict resolution, and manage risks between programs.
- VA Enterprise Cloud (VAEC) – OIT is currently piloting a program to migrate all 130 instances of VistA to the VAEC. Last month, OIT successfully migrated the first VistA instance to the cloud—a historic milestone and strong first step toward full cloud migration for VistA. Over the next year alone, VA will migrate 70 more instances of VistA from the St. Louis Defense Information Systems Agency (DISA) data center into the cloud.

## CONCLUSION

As VistA functionality is replaced by a COTS solution and other systems, VA can decommission VistA products as appropriate. Until the new EHR solution is implemented across the VA enterprise, VistA remains VA's authoritative source of Veteran data. Sustaining VistA for the duration of our EHRM effort ensures that Veterans continue to receive uninterrupted care and services while VA looks to the future and improves the Veteran experience.

Madam Chair, Ranking Member, and Members of the Subcommittee, thank you for the opportunity to appear before you today to discuss OIT's progress toward VistA transition. I look forward to continuing to work with this Subcommittee to address our greatest priorities. This concludes my testimony, and I look forward to answering your questions.

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### **1. Acknowledgement of GAO Report**

The Department of Veterans Affairs (VA) Office of Information and Technology (OIT) acknowledges the Government Accountability Office's (GAO) report released in July 2019, titled "ELECTRONIC HEALTH RECORDS: VA Needs to Identify and Report System Costs" regarding the costs and requirements of sustainment of the Veterans Health Information Systems and Technology Architecture (VistA) system during VA's transition to Cerner Millennium and other systems intended to replace VistA functionality.

Under the section titled "Recommendation for Executive Action," GAO recommended that the Assistant Secretary for Information and Technology and Chief Information Officer work with the Under Secretary for Health to develop and implement a methodology for reliably identifying and reporting the total costs of VistA sustainment. The report states that this methodology should include steps to define VistA and include planned sustainment activities. OIT acknowledges this recommendation and is currently developing such a methodology and continues to conduct current, ongoing, and planned sustainment activities. OIT presents this written testimony to provide further information regarding current and ongoing efforts related to VistA sustainment and the Electronic Health Record Modernization (EHRM) effort.

## **2a. Definition of VistA**

VistA is VA's comprehensive information system for Veteran care and services. It supports a complex set of clinical, administrative, and financial operations for the Veterans Health Administration (VHA).

VistA is an architecture that includes servers, personal workstations, and a variety of applications within the supporting infrastructure including data centers, storage, and messaging technologies. It provides a wide variety of functionalities and therefore may also support functions outside of VHA.

VistA supports over 150 applications and the operations of more than 1,500 VA facilities. Applications focus on clinically-relevant record keeping that improves patient care by improving clinical and administrative decision-making. Facilities range from small clinics that provide solely outpatient care to large medical centers with significant inpatient populations and their associated specialties. VistA is deployed across VHA at more than 1,500 sites of care, including Veterans Affairs Medical Centers (VAMC), Community Based Outpatient Clinics (CBOC) and Community Living Centers (CLC), as well as at nearly 300 VA Vet Centers. VistA was designed and often developed and implemented jointly by VHA clinicians and IT personnel at VHA facilities. It has been in use since 1983, nearly 40 years.

### **2ai. Definition of VistA: Electronic Health Record**

VistA is VHA's full-featured Health Information System and electronic health record (EHR). It contains an EHR for each patient and supports the clinical, administrative, and financial functions of VAMCs and VA facilities across the country. VistA interfaces with applications through messaging protocols and reporting mechanisms.

### **2aii. Interoperability**

As an EHR, VistA sends and exchanges stored health data with other VA systems, other Federal agencies (e.g., Department of Defense), health information exchange networks, community care providers, and more than 100 commercial off-the-shelf (COTS) products. VistA is not currently interoperable with the Department of Defense (DoD), so VA users instead use the DoD/VA Joint Legacy Viewer (JLV), a Web-based



graphical user interface. Additionally, VA and DoD share allergens and medication data with each other in a system called the Health Data Repository (HDR) which feeds data to other systems that can alert VA clinicians while using VistA.

### **2aiii. Other functionalities**

As the GAO report notes, VistA provides functionality beyond traditional EHRs. It exchanges information with many other applications and interfaces. It provides a variety of other functionalities including asset management, financial transaction management, a billing system, and supply chain management. These functions primarily support VHA facilities, but instances of VistA may also be used by local Veterans Benefits Administration (VBA) and National Cemetery Administration (NCA) facilities and cemeteries. For example, a local cemetery may use VistA for its supply chain management needs.

### **2b. Definition of Instances of VistA**

There are 130 instances of VistA across the VA enterprise. An instance of VistA is an occurrence of the system that serves a VAMC and its associated clinics, and other potential VA facilities within a defined geographical region. Generally, there is one instance of VistA per health care system or VAMC and associated clinics. However, over the years, some VAMCs have been consolidated onto the same VistA instance, so there is not exactly a 1:1 ratio of instance and site. Each instance also consists of the hardware and software used to provide VistA capabilities for a health care system.

### **2c. Explanation of Variation in Instances of VistA**

Each instance of VistA may have slight modifications and variations that serve requirements unique to that geographical region. However, the code between instances has been made nearly identical through work over the last 6 years through the VistA Evolution Program. Implementation of the new EHR solution will help consolidate and standardize VistA instances. OIT is working to avoid any changes to VistA which could needlessly alter VistA's configuration prior to full implementation of the new EHR solution would complicate and delay implementation efforts.

## **2d. Plans to Further Define VistA**

VA is currently developing a methodology to refine the definition of VistA.

## **3a. Note on GAO Report Assessment**

The GAO report examined cost data provided by OIT and VHA associated with the development and sustainment of VistA for FYs 2015, 2016, and 2017 only.

## **3b. Methodology**

VA is currently developing a methodology to update the sustainment cost data.

## **3c. Comprehensive Total Cost Assessment**

Cost data has been updated. It currently costs VA \$426 million to sustain VistA through FY 2019. VA is developing projected sustainment costs over the course of the new EHR solution implementation. VA's estimated minimum cost for VistA during this 10-year transition period is at least \$4.89 billion, not including newly required development. VA is currently developing a methodology to update the cost data and redefine VistA.

## **3d. Limitations**

During the transition from VistA to the new EHR solution, the two systems will need to be operated in parallel. In addition, VistA is expected to run without service degradation until all VAMCs have been migrated to Cerner, at which time the redundant VistA modules will be decommissioned. For these reasons, there is currently no VistA sustainment cost reduction directly tied to the EHRM effort.

## **4. Need for Sustainment**

Further, VistA modules whose functionality is not replaced by Cerner Millennium will need to be maintained until replacement solutions are developed and deployed. For example, Cerner Millennium does not replace some financial management and supply chain management functions provided by VistA. Other programs, such as Financial Management Business Transformation (FMBT) and Defense Medical Logistics

Standard Support (DMLSS) will replace those functionalities. VistA cannot be decommissioned until all current functionality is replaced by a modernized replacement system, whether Cerner Millennium or otherwise. However, these other programs are expected to be developed and implemented on a shorter timeline (i.e., less than 10 years). Since implementation of the new EHR solution is currently projected to take 10 years, the EHRM effort is the ultimate driver of VistA sustainment and full transition.

#### **4a. Facilities Use of VistA During EHRM**

Facilities will continue to use their instance of VistA until other concurrent modernization projects have replaced all functionalities of that VistA instance. Only then can the facility fully transition from VistA to the new EHR solution and other replacement solutions.

### **5. Long-Term Strategy for Sustainment**

Despite the need to maintain Vista over the course of the EHRM effort and the development and implementation of additional modernized replacement systems, there are current and ongoing efforts to reduce some costs of sustainment and make transition efforts more efficient. For example:

#### **5a. Consolidation of Teams and Resources**

OIT is consolidating teams and resources between Transition, Release and Support (TRS) and Enterprise Program Management Division for maximum efficiency.

#### **5b. OTI**

The newly established Office of Technical Integration (OTI) facilitates communication and planning between OIT and various program offices that are implementing the systems that will replace VistA. OTI will track and report progress from these program offices, facilitate real-time conflict resolution, and manage risks between programs.

#### **5c. Cloud Migration**

OIT is currently piloting a program to migrate all 130 instances of VistA to the VA

Enterprise Cloud (VAEC). Last month, OIT successfully migrated the first instance of VistA to the cloud. This is a significant achievement which will support VA's "Cloud First" policy and modernization initiatives as established by the Federal Chief Information Officer.

Over the next year alone, VA will migrate 70 more instances of VistA from the St. Louis Defense Information Systems Agency (DISA) data center into the cloud. Hosting VistA in the cloud is more cost-effective than hosting in physical data centers. It allows OIT to make updates more quickly, saving labor hours. It also improves system and application speed and performance and is more scalable, making it more valuable to OIT's business partners.

## **6. Activities to Plan for Transition**

VA is working closely with DoD during this major business transformation. DoD and VA have appointed co-chairs for all efforts. VA is collaborating with Cerner to understand the technical support requirements to connect to the Cerner Millennium Cloud Data Center and to develop the processes necessary to accommodate emerging technologies. VA is also working with its community care partners, focusing on interoperability and bidirectional information exchange.

To allow for seamless interoperability between Cerner and VistA over the course of implementation, JLV will be enhanced to include a Cerner viewer. This will allow sites that have not yet transitioned to access new electronic data repositories and to create stand-alone technical solutions to share data with the new EHR solution. In addition, the requisite interfaces with VistA and the new product capabilities and related workflows will be fully tested before transitioning to the operational environment. During this time, Cerner HealthIntent will become the authoritative data store for Veteran health care information, since it is populated with all Veteran information and since information from VistA sites will be written into HealthIntent real-time through VDIF, the middleware.

## **6a. Establishment of Program Office**

To establish a leadership accountable for planning and executing the EHRM effort and addressing difficulties to ensure program success, VA established the Office of Electronic Health Record Modernization (OEHRM) in June 2018. OEHRM's initial Program Management Plan guides management and defines program policies and processes.

## **6a. Governance Structure**

OEHRM is comprised of three management structures. The Chief Medical Office oversees strategy and planning; communication efforts for business process changes; and user testing, training, and deployment. The Technology and Integration Office provides technical leadership, management, and oversight and supports interoperability with DoD. Lastly, the Program Management Office provides program support through adherence to cost, schedule, and performance objectives. OEHRM has a governance structure that is intended to allow leadership to address technical and functional issues as well as joint management issues that may arise between VA and DoD during the process of their respective EHR implementation efforts. The structure consists of a Steering Committee; a Governance Integration Board, which oversees a Technical Governance Board and Functional Governance Board; and the Electronic Health Record Councils.

OIT is also working closely with DoD on the organizational development of the Federal Electronic Health Record Modernization (FEHRM) Program Office. The FEHRM Program Office will serve as the re-chartered DoD/VA Interagency Program Office (IPO). In short, OIT is working collaboratively with VHA, OEHRM, IPO/FEHRM, and their associated partners to achieve successful implementation, leverage lessons learned and best practices, leverage common infrastructure, innovate to improve business processes, and facilitate effective adjudication of issues.

## 6b. Role of OIT

OIT plays several roles in this business transformation process. According to established baseline standards for initial operating capability (IOC), OIT is responsible for upgrades to the IT infrastructure and local area network infrastructure. These infrastructure upgrades are critical to success of the deployment of the new EHR solution.

OIT is also involved in the following areas:

- **Coordination, planning, and budgeting:** OIT works collaboratively with OEHRM, based on requirements submitted in VA IT Process Request (VIPR), to provide planning, budgeting, project management, infrastructure assessments, and other support to EHRM.
- **Fielding:** In support of VHA and the IOC/VAMC sites, OIT focuses on the infrastructure line of effort to ensure that all aspects of the network architecture will support accessing the new EHR solution and associated systems, within VHA-defined service levels response times.
- **Access Management:** OIT coordinates closely with Office of Operations, Security, and Preparedness in development and implementation of access control (PIV cards), and with OEHRM and DoD for secure access to Cerner Millennium resources in the DoD Medical Community of Interest (MedCOI) environment.
- **Cybersecurity:** OIT is in close coordination with DoD regarding shared network security standards and reciprocity between DoD and VA systems.
- **End user experience with system performance:** OIT organizes activities among multiple stakeholders to manage service provision and system access.

OIT is working closely with VHA and OEHRM to plan an accelerated implementation of the Cerner Standalone Scheduling module; design system interfaces between legacy applications and the Cerner Millennium suite; adjudicate requests for legacy Vista upgrades against pending Cerner Millennium functionality; and design service desk

interface tools and business rules to improve collaboration with end user reported issues.

#### **6c. Assessment of Sites**

VA is currently conducting site assessments at IOC sites to refine requirements and prepare for implementation. VA has identified three primary IOC sites for assessment: VA Puget Sound Health Care System, American Lake Division; VA Puget Sound Health Care System, Seattle Division; and Mann-Grandstaff VA Medical Center. During assessment at these sites, VA determined that some infrastructure and workstations would need to be updated to achieve compatibility with Cerner Millennium. In addition, sites that offer such VA services as telehealth and behavioral and mental health services would need additional attention from Cerner to meet business and system requirements. These site assessments are intended to produce lessons learned and ease deployment and implementation efforts at the rest of the sites Nation-wide.

In the Pacific Northwest, there are the following:

- 5 VA Health Care Systems;
- 6 VA Medical Centers (VAMC);
- 9 Outpatient clinics;
- 17 Vet Centers; and
- 34 Community-based outpatient clinics (CBOC).

#### **6d. Initial Operating Capability**

VA is working with Cerner to implement the new EHR solution at three IOC sites in the Pacific Northwest. As DoD has already deployed to this region, VA selected the Pacific Northwest to maximize efficiencies through DoD's lessons learned. This strategy also allows VA to leverage DoD's data hosting environment and adopt enhanced cybersecurity protocols to facilitate interoperability.

For FY 2019, OIT is accessing OEHRM infrastructure funding to support IOC with network switch upgrades, bandwidth upgrades, Wi-Fi implementation and upgrades,

new endpoint devices, surge implementation support, and monitoring tools and licenses.

#### **6e. System Implementation**

After implementation at the IOC sites in the Pacific Northwest, VA will deploy the new EHR solution across the enterprise. As previously discussed, VA will maintain and support VistA until full Cerner implementation. This ensures that current patient records are accessible and that there will be no interruption in the delivery of quality health care to our Nation's Veterans.