



Report to the House Committee on
Oversight and Government Reform,
Subcommittee on Information
Technology

January 2018

VA HEALTH IT MODERNIZATION

Historical Perspective on Prior Contracts and Update on Plans for New Initiative

GAO Highlights

Highlights of [GAO-18-208](#), a report to the House Committee on Oversight and Government Reform, Subcommittee on Information Technology

Why GAO Did This Study

VA operates the largest health care delivery system in America and VistA is essential to helping deliver the health care services and ensure the quality of health care received by the nation's veterans and their dependents. The system has been in operation for more than 30 years, is costly to maintain, and does not readily support VA's need to electronically exchange health records with the Department of Defense and private health care providers. VA has pursued initiatives to modernize VistA, using government contractors to support its efforts. In June 2017, VA announced a new effort to purchase a commercial solution to replace VistA.

GAO was requested to review VA's prior and current efforts to modernize VistA. This review determined (1) VA's efforts to modernize VistA, including key contractors, contract costs, and expected contractor activities and (2) VA's current plans for modernizing VistA and the progress that has been achieved to date. To conduct its study, GAO reviewed VA documentation and its prior work and requested and obtained data on contracts, related obligations, and expected contractor activities for previous efforts. GAO also obtained documentation on plans for VA's current modernization efforts and progress made on the efforts, and interviewed VA officials.

GAO has made recommendations to VA aimed at improving its prior modernization efforts. The department concurred with the recommendations and generally took responsive actions. GAO is making no recommendations at this time. VA provided technical comments on this report, which were incorporated as appropriate.

View [GAO-18-208](#). For more information, contact David A. Powner at (202) 512-9286 or pownerd@gao.gov.

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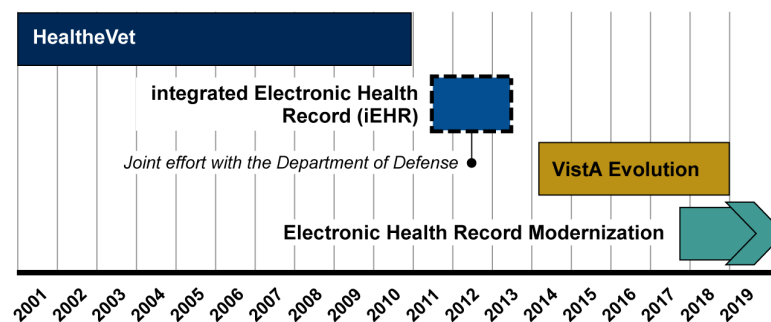
What GAO Found

The Department of Veterans Affairs (VA) has, since 2001, pursued four separate initiatives to modernize its health information system—the Veterans Health Information Systems and Technology Architecture (VistA). These efforts—HealtheVet, the integrated Electronic Health Record (iEHR), VistA Evolution, and the Electronic Health Record Modernization (EHRM)—reflect varying approaches that the department has considered to achieve a modernized health system over the course of nearly two decades (see figure). This latest effort, the EHRM program, is to include the adoption of the same commercial electronic health record system that the Department of Defense is in the process of acquiring.

VA obligated about \$1.1 billion to 138 different contractors that worked on iEHR and VistA Evolution (the two efforts for which VA could provide contract data) during fiscal years 2011 through 2016. Funding for the 34 contractors that worked on both efforts totaled about \$793 million of the \$1.1 billion obligated for contracts on the two initiatives. The top 15 of the contractors that worked on the two efforts (key contractors) accounted for approximately \$741 million—\$411 million for the development of new system capabilities, \$256 million for project management activities, and \$74 million for operations and maintenance for iEHR and VistA Evolution.

VA has begun planning for the transition from VistA Evolution to EHRM. However, the department is still early in its efforts and has begun developing plans that are intended to guide the new EHRM program. According to the EHRM Executive Director, the department intends to complete development of its plans for EHRM within 90 days after awarding the contract for its new system, which is planned to occur in early 2018. VA has also begun to staff the EHRM program's leadership positions. The department's dedication to completing and effectively executing the planning activities that it has identified will be essential to helping minimize program risks and expeditiously guide this latest electronic health record modernization initiative to a successful outcome—which VA, for almost two decades, has been unable to achieve.

Timeline of Four Efforts to Modernize VistA



Fiscal years

Source: GAO analysis of Department of Veterans Affairs data. | GAO-18-208

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Abbreviations

COTS	commercial off-the-shelf
CPRS	Computerized Patient Record System
DOD	Department of Defense
EHRM	Electronic Health Records Modernization
iEHR	integrated Electronic Health Record
IT	information technology
OI&T	Office of Information and Technology
VA	Department of Veterans Affairs
VHA	Veterans Health Administration
VistA	Veterans Health Information Systems and Technology Architecture

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January 18, 2018

The Honorable Will Hurd
Chairman
The Honorable Robin L. Kelly
Ranking Member
Subcommittee on Information Technology
Committee on Oversight and Government Reform
House of Representatives

The Department of Veterans Affairs (VA) operates the largest health care delivery system in the United States, providing health care to almost 7 million veterans and their families at more than 1,500 medical facilities. The department's health information system—the Veterans Health Information Systems and Technology Architecture (VistA)—is essential to VA's ability to deliver health care. However, this system has been in operation for more than 30 years, is costly to maintain, and does not readily support VA's need to electronically exchange health records with other organizations, such as the Department of Defense (DOD) and private health care providers. Accordingly, the department has undertaken various efforts to modernize the system, using government contractors to do so.

In 2008, and again in 2014, we reported on significant challenges in VA's efforts to modernize VistA.¹ Given these longstanding challenges, you asked us to provide information on the department's VistA modernization efforts. Our specific objectives were to (1) identify the efforts that VA has undertaken to modernize VistA, including key contractors, contract costs, and expected contractor activities and (2) determine the department's current plans for, and progress to date, in modernizing VistA.

To address our first objective, we reviewed VA documentation, including the department's budget submissions and other information compiled during prior GAO work that examined the department's initiatives to modernize VistA. We also obtained documentation from the Veterans

¹See GAO, *Veterans Affairs: Health Information System Modernization Far from Complete; Improved Project Planning and Oversight Needed*, [GAO-08-805](#) (Washington, D.C.: June 30, 2008) and *Electronic Health Records: VA and DOD Need to Support Cost and Schedule Claims, Develop Interoperability Plans, and Improve Collaboration*, [GAO-14-302](#) (Washington, D.C.: Feb. 27, 2014).

Health Administration (VHA), the major component within the department tasked with delivering health care services, and VA's Office of Information and Technology (OI&T), which oversees the department's information technology (IT) acquisitions and operations. This documentation described contracts, related obligations, and expected contractor activities for the department's VistA modernization efforts, from fiscal years 2011 through 2016—the time period for which data were available.²

In compiling contract data, we included data on awards of new contracts; modifications to previously awarded contracts; and the issuance of task orders on indefinite delivery, indefinite quantity contracts. VA was unable to provide data on VistA modernization contracts prior to fiscal year 2011 because the department's records retention policy does not require it to maintain such data. In addition, we did not request contract data subsequent to fiscal year 2016 because that is the last fiscal year for which data for a full year was available at the time that we were performing our analysis. We analyzed the available data to determine the number of contractors working on the modernization efforts and the amounts of funding that were obligated to the contracts.

To determine the key contractors, we first identified all of the contractors that worked on both modernization efforts for which we received data. We then ranked the identified contractors according to the total reported dollars obligated for contracts that each contractor had been awarded. We designated the top 15 ranked contractors, in terms of dollars obligated, as key contractors. These 15 key contractors received contracts that accounted for about two-thirds of the funds obligated to VistA modernization contracts from fiscal years 2011 through 2016. We subsequently analyzed the information that VA provided on the work tasks to be performed by these key contractors to identify obligations made for contracts to provide different types of work, including development, project management, and operations and maintenance.

We assessed the reliability of the contract data we received by reviewing it for missing elements and outliers. We met with officials responsible for VistA-related contracting to address questions about any missing data and outliers, as well as to obtain additional information about how the data were developed. We supplemented the data by using additional

²VA's Office of Information and Technology was established in 2007 and is a centralized organization that manages most key functions intended for effective management of IT.

information received from VA and the Federal Procurement Data System.³ We determined that the data were sufficiently reliable for the purposes of our reporting objective.

To determine current plans for modernizing VistA, we reviewed available documentation, which included draft program schedules, organization charts, congressional testimonies of the VA Secretary, a White House press conference transcript, departmental press releases, and the department's justification for awarding a non-competitive contract for a commercial off-the-shelf (COTS) electronic health record system. To determine the progress achieved on the current efforts, we obtained and reviewed documentation, such as draft schedules and organization charts, and met with senior VA officials to obtain updated information on the efforts. A full description of our objectives, scope, and methodology can be found in appendix I.

We conducted this performance audit from September 2016 to January 2018 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.

Background

VA is responsible for providing a variety of services to veterans and their families (i.e., spouses and children), including health care, disability compensation, and vocational rehabilitation. Within the department, VHA oversees the delivery of health care services, including primary care, specialized care, and related medical and social support at its more than 1500 medical facilities located throughout the country. As of fiscal year 2016, about 9 million veterans were enrolled in the VA health care system, with almost 7 million patients receiving services at its medical facilities each year.

³The Federal Procurement Data System-Next Generation, managed by the U.S. General Services Administration, is a web-based tool for agencies to report contract transactions. It is also a searchable database of contract information that provides a capability to examine data across government agencies and provides managers a mechanism for determining where contract dollars are being spent.

Overview of VistA

VHA relies on VistA—its health information system—to assist in the daily operations of providing health care to patients. VistA began operation in 1983 as the Decentralized Hospital Computer Program. In 1996, the department changed the name of the system to the Veterans Health Information Systems and Technology Architecture—VistA.

The system is comprised of more than 200 different software applications, including 17 pharmacy applications; 11 laboratory applications; 10 eligibility, enrollment, and registration applications; and 12 financial management applications. Most VistA applications are based on an architecture that links servers and personal computer workstations at VA facilities. VistA also has interfaces with applications within other VA systems, as well as selected systems of other federal agencies (e.g., DOD health information systems used to treat injured service members) and private care providers and pharmacies.

VistA was developed based on the collaboration of staff in the VA medical facilities and VHA IT personnel, with the intention of providing a system that would meet the clinicians' needs. Specifically, clinicians and IT personnel in the various medical facilities collaborated to define the system's requirements and, in certain cases, carried out its development and implementation. In this regard, staff at a medical center could develop and implement applications at the local level to facilitate the potentially different functions at each location. This approach has resulted in about 130 different instances, or variations, of the system being used throughout the department's medical facilities.

VA has made numerous enhancements to the functionality of VistA since 1983. A significant example is the release in 1996 of the Computerized Patient Record System (CPRS), a graphical user interface that enabled the department to provide an individual electronic health record for each VA patient.⁴ Specifically, CPRS enables clinicians to enter, review, and continuously update information connected with a patient. Among other things, clinicians can order lab tests, medications, diets, radiology tests, and procedures; record a patient's allergies or adverse reactions to

⁴An electronic health record is a collection of information about the health of an individual or the care provided, such as patient demographics, progress notes, health problems, medications, vital signs, past medical history, immunizations, laboratory data, and radiology reports.

medications; request and track consults; enter progress notes, diagnoses, and treatments for each encounter; and enter discharge summaries.

Another example of the enhancements made to VistA was the department's implementation of an imaging capability (VistA Imaging) at all of the medical facilities. This capability enabled multimedia data, such as radiology images, to be linked to a patient's electronic medical record.

VistA contains a comprehensive, integrated, electronic health record for each patient that is viewable by all of the department's clinicians at all of its medical facilities, thus eliminating the need for paper medical records. This capability has been key to the department's efforts over the last 20 years to share electronic medical records with DOD, and with its work to achieve interoperability, which enables different information systems or components to exchange information and to use the information that has been exchanged.

Nevertheless, even with the enhancements and modifications made to VistA over time, the system is more than 30 years old and has become increasingly difficult and costly to maintain. One reason VistA is difficult and costly to maintain is that the system is programmed in the MUMPS⁵ programming language, a language for which there is a continually dwindling supply of qualified software developers, according to the department.

In 2015, an independent assessment of health IT at VA, conducted by the MITRE Corporation, raised questions regarding the lack of any clear advances made during the past decade with VistA and the increasing amount of time needed for VA to release new capabilities.⁶ The study also noted that the standards and terminology used by VistA do not enable interoperability across the multiple systems within VA, or between the department and non-VA facilities, including private sector providers and DOD. Given the concerns identified, the study recommended that VA assess the cost versus benefits of various alternatives for delivering

⁵The Massachusetts General Hospital Utility Multi-Programming System, now referred to as M, or MUMPS.

⁶MITRE Corporation, *Independent Assessment of the Health Care Delivery Systems and Management Processes of the Agency of Veterans Affairs, Volume 1: Integrated Report* (Washington, D.C.: Sept. 1, 2015). This assessment was conducted in response to a requirement in the *Veterans Access, Choice, and Accountability Act of 2014*, Pub. L. No. 113-146, § 201, 128 Stat. 1754, 1769 (Aug. 7, 2014).

modernized capabilities, such as COTS electronic health record systems, open source systems, and the continued development of VistA.

VA Has Pursued Four VistA Modernization Initiatives Since 2001, with Over a Billion Dollars Obligated for Contractors' Activities During Fiscal Years 2011 through 2016

Since 2001, VA has pursued four efforts to modernize VistA. These efforts—HealtheVet, the integrated Electronic Health Record (iEHR), VistA Evolution, and the Electronic Health Record Modernization (EHRM)—reflect varying approaches that the department has considered to achieve a modernized health care system over the course of nearly two decades. The modernization efforts are described as follows.

HealtheVet

In 2001, VA undertook its first VistA modernization project, the HealtheVet initiative, with the goals of standardizing the department's health care system and eliminating the approximately 130 different systems used by its field locations at that time. HealtheVet was scheduled to be fully implemented by 2018 at a total estimated development and deployment cost of about \$11 billion. As part of the effort, the department had planned to develop or enhance specific areas of system functionality through six projects, which were to be completed between 2006 and 2012. Specifically, these projects were to provide capabilities to support VA's Health Data Repository and Patient Financial Services System, as well as the Laboratory, Pharmacy, Imaging, and Scheduling functions.

In June 2008, we reported that the department had made progress on the HealtheVet initiative, but noted issues with project planning and governance.⁷ In June 2009, the Secretary of Veterans Affairs announced that VA would stop financing failed projects and improve the management of its IT development projects. Subsequently in August 2010, the department reported that it had terminated the HealtheVet initiative.

⁷GAO, *Veterans Affairs: Health Information System Modernization Far from Complete; Improved Project Planning and Oversight Needed*, [GAO-08-805](#) (Washington, D.C.: June 30, 2008)

iEHR

In February 2011, VA began its second VistA modernization initiative, the iEHR program, in conjunction with DOD. The program was intended to replace the two separate electronic health record systems used by the two departments with a single, shared system. In addition, because both departments would be using the same system, this approach was expected to largely sidestep the challenges that had been encountered in trying to achieve interoperability between their two separate systems.

Initial plans called for the development of a single, joint iEHR system consisting of 54 clinical capabilities to be delivered in six increments between 2014 and 2017. Among the agreed-upon capabilities to be delivered were those supporting laboratory, anatomic pathology, pharmacy, and immunizations. According to VA and DOD, the single system had an estimated life cycle cost of \$29 billion through the end of fiscal year 2029.

However, in February 2013, the Secretaries of VA and DOD announced that they would not continue with their joint development of a single electronic health record system. This decision resulted from an assessment of the iEHR program that the secretaries had requested in December 2012 because of their concerns about the program facing challenges in meeting deadlines, costing too much, and taking too long to deliver capabilities. In 2013, the departments abandoned their plan to develop the integrated system and stated that they would again pursue separate modernization efforts.

VistA Evolution

In December 2013, VA initiated its VistA Evolution program as a joint effort of VHA and OI&T that was to be completed by the end of fiscal year 2018. The program was to be comprised of a collection of projects and efforts focused on improving the efficiency and quality of veterans' health care by modernizing the department's health information systems, increasing the department's data exchange and interoperability with DOD and private sector health care partners, and reducing the time it takes to deploy new health information management capabilities. Further, the program was intended to result in lower costs for system upgrades, maintenance, and sustainment. According to the department's March 2017 cost estimate, VistA Evolution was to have a life cycle cost of about \$4 billion through fiscal year 2028.

Since initiating VistA Evolution in December 2013, VA has completed a number of key activities that were called for in its plans. For example, the department delivered capabilities, such as the ability for health providers to have an integrated, real-time view of electronic health record data through the Joint Legacy Viewer, as well as the ability for health care providers to view sensitive DOD notes and highlight abnormal test results for patients.⁸ VA also initiated work to standardize VistA across the 130 VA facilities and released enhancements to its legacy scheduling, pharmacy, and immunization systems. In addition, the department released the enterprise Health Management Platform, which is a web-based user interface that assembles patient clinical data from all VistA instances and DOD.

Although VistA Evolution is ongoing, VA is currently in the process of revising its plan for the program as a result of the department recently announcing its pursuit of a fourth VistA modernization program (discussed below). For example, the department determined that it would no longer pursue additional development or deployment of the enterprise Health Management Platform—a major VistA Evolution component—because the new modernization program is envisioned to provide similar capabilities.

EHRM

In June 2017, the VA Secretary announced a significant shift in the department's approach to modernizing VistA. Specifically, rather than continue to use VistA, the Secretary stated that the department plans to acquire the same electronic health record system that DOD is implementing. In this regard, DOD has contracted with the Cerner Corporation to provide a new integrated electronic health record system.⁹ According to the Secretary, VA has chosen to acquire this same product because it would allow all of VA's and DOD's patient data to reside in one system, thus enabling seamless care between the department and DOD

⁸The Joint Legacy Viewer was developed jointly by VA and DOD and is a tool that provides a real-time, integrated, categorized, and chronological view of electronic health record information contained in existing VA and DOD systems.

⁹In July 2015, DOD awarded a \$4.3 billion contract to the Cerner Corporation for a new integrated electronic health record system, known as MHS GENESIS. The transition to the new system began in February 2017 in the Pacific Northwest region of the United States and is expected to be completed in 2022.

without the manual and electronic exchange and reconciliation of data between two separate systems.

According to the VA Secretary, this fourth VistA modernization initiative is intended to minimize customization and system differences that currently exist within the department's medical facilities, and ensure the consistency of processes and practices within VA and DOD. When fully operational, the system is intended to be the single source for patients to access their medical history and for clinicians to use that history in real time at any VA or DOD medical facility, which may result in improved health care outcomes. According to VA's Chief Technology Officer, Cerner is expected to provide integration, configuration, testing, deployment, hosting, organizational change management, training, sustainment, and licenses necessary to deploy the system in a manner that meets the department's needs.

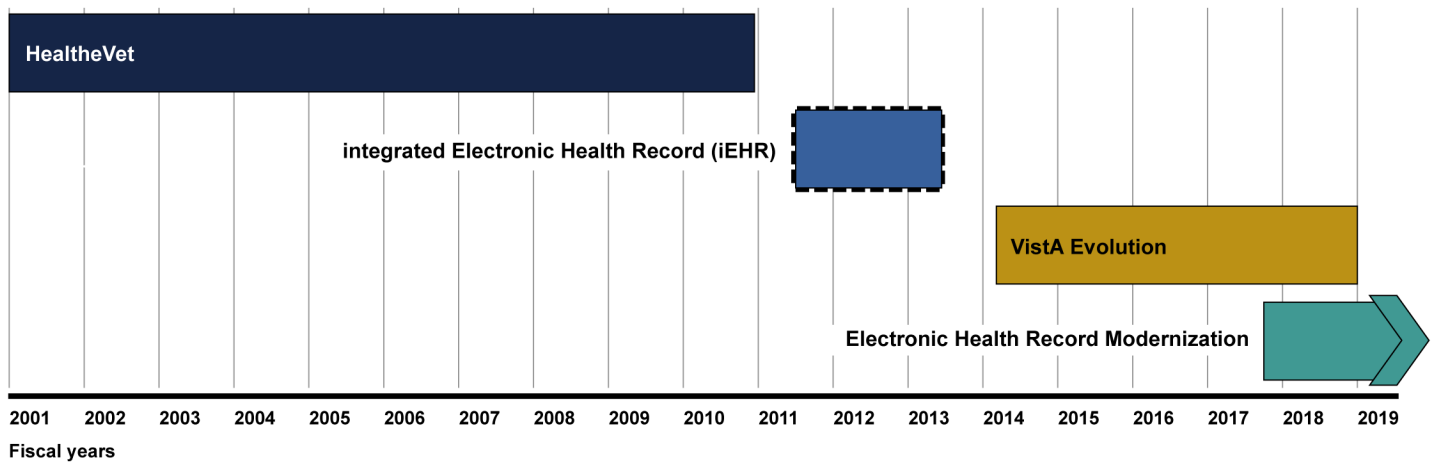
To expedite the acquisition, in June 2017, the Secretary signed a "Determination and Findings," for a public interest exception to the requirement for full and open competition, and authorized VA to issue a solicitation directly to the Cerner Corporation.¹⁰ According to the Secretary, VA expects to award a contract to Cerner in early 2018, and deployment of the new system is anticipated to begin 18 months after the contract has been signed.


VA's Executive Director for the Electronic Health Records Modernization System stated that the department intends to deploy the new system incrementally to its medical facilities. Each facility is expected to continue using VistA until the new system has been deployed at that location. VA expects that the new system will be implemented at all VA medical facilities within 7 to 8 years after the first deployment.

Figure 1 shows a timeline of the four efforts that VA has pursued to modernize VistA since 2001.

¹⁰FAR, 48 C.F.R. § 6.302-7.

Figure 1: Timeline of the Department of Veterans Affairs Four Efforts to Modernize VistA Since 2001



 Joint effort with the Department of Defense

Source: GAO analysis of Department of Veterans Affairs data. | GAO-18-208

VA Obligated About \$1.1 Billion for VistA Modernization Contracts from 2011 through 2016

For iEHR and VistA Evolution, the two modernization initiatives for which VA could provide contract data,¹¹ VA obligated approximately \$1.1 billion for contracts with 138 different contractors during fiscal years 2011 through 2016.¹² Specifically, the department obligated approximately \$224 million and \$880 million, respectively, for contracts associated with these efforts. Of the 138 contractors, 34 performed work supporting both, iEHR and VistA Evolution. The remaining 104 contractors worked exclusively on either iEHR or VistA Evolution.

Funding for the 34 contractors that worked on both iEHR and VistA Evolution totaled about \$793 million of the \$1.1 billion obligated for contracts on the two initiatives. Obligations for contracts awarded to the

¹¹VA was not able to provide contract data related to the HealtheVet effort. The department indicated that it could not verify any HealtheVet vendors receiving payments because the time frame for the contracts falls outside the record retention required by regulations. According to the *Federal Acquisition Regulation*, government agencies are only required to retain contract records for six years after the final payment (48 C.F.R. § 4.805). HealtheVet was terminated in August 2010.

¹²The 138 different contractors that supported iEHR and VistA Evolution in fiscal years 2011 through 2016 were obligated funds for a total of 783 contract actions, which included awards of new contracts, modifications to previously awarded contracts, and issuance of task orders on indefinite delivery, indefinite quantity contracts.

top 15 of these 34 contractors (which we designated as key contractors) accounted for about \$741 million (about 67 percent) of the total obligated for contracts on the two initiatives. The remaining 123 contractors were obligated about \$364 million for their contracts.

The 15 key contractors were obligated about \$564 million and \$177 million for VistA Evolution and iEHR contracts, respectively. Table 1 identifies the key contractors and their obligated dollar totals for the two efforts.

Table 1: Key Contractors and the Amounts (in millions) Obligated to Each for Contracts on iEHR and VistA Evolution from 2011-2016

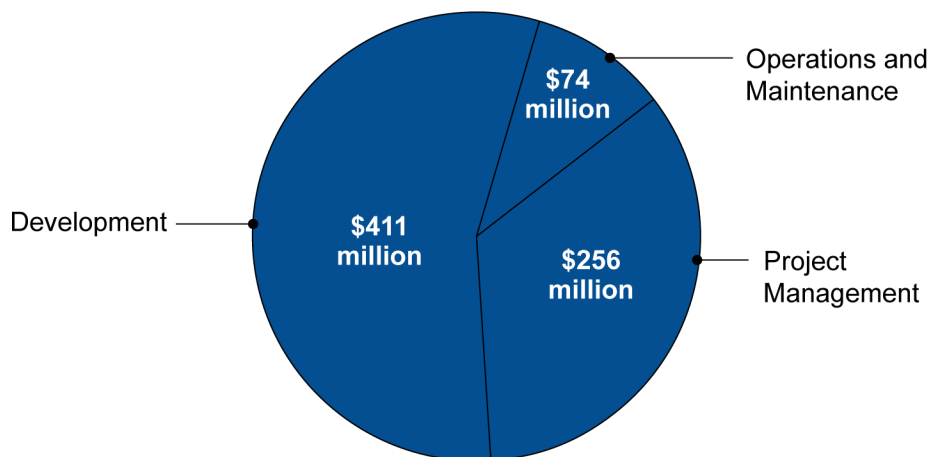
Key contractor name	iEHR	VistA Evolution	Total
ASM Research	\$18.1	\$144.5	\$162.6
Systems Made Simple, Inc.	9.5	82.6	92.0
HP Enterprise Services, LLC	24.3	57.6	81.9
Harris Corporation	39.3	34.0	73.3
Technatomy Corporation	18.4	46.7	65.0
Booz Allen Hamilton, Inc.	7.8	53.6	61.5
The MITRE Corporation	6.3	35.6	41.8
SBG Technology Solutions	6.3	24.8	31.1
LongView International Technology Solutions, Inc.	11.9	15.8	27.7
By Light Professional IT Services, LLC	4.4	23.3	27.7
Business Information Technology Solutions, Inc.	10.4	13.8	24.2
Systems Research and Applications Corporation	3.0	15.3	18.3
Cerner Corporation	6.3	7.1	13.5
CACI International, Inc.	6.3	4.4	10.7
Open Source Electronic Health Record Alliance	4.9	4.6	9.5
Total for 15 key contractors	177.1	563.8	740.9

Source: GAO analysis of Department of Veterans Affairs contract data on iEHR and VistA Evolution. | GAO-18-208

Additionally, we determined that, of the \$741 million obligated to the key contractors, \$411 million (about 55 percent) was obligated for contracts supporting the development of new system capabilities, \$256 million (about 35 percent) was obligated for contracts supporting project management activities, and \$74 million (about 10 percent) was obligated for contracts supporting operations and maintenance for iEHR and VistA Evolution. VA obligated funds to all 15 of the key contractors for system development, 13 of the key contractors for project management, and 12

of the key contractors for operations and maintenance. Figure 2 shows the amounts obligated for each of these areas.

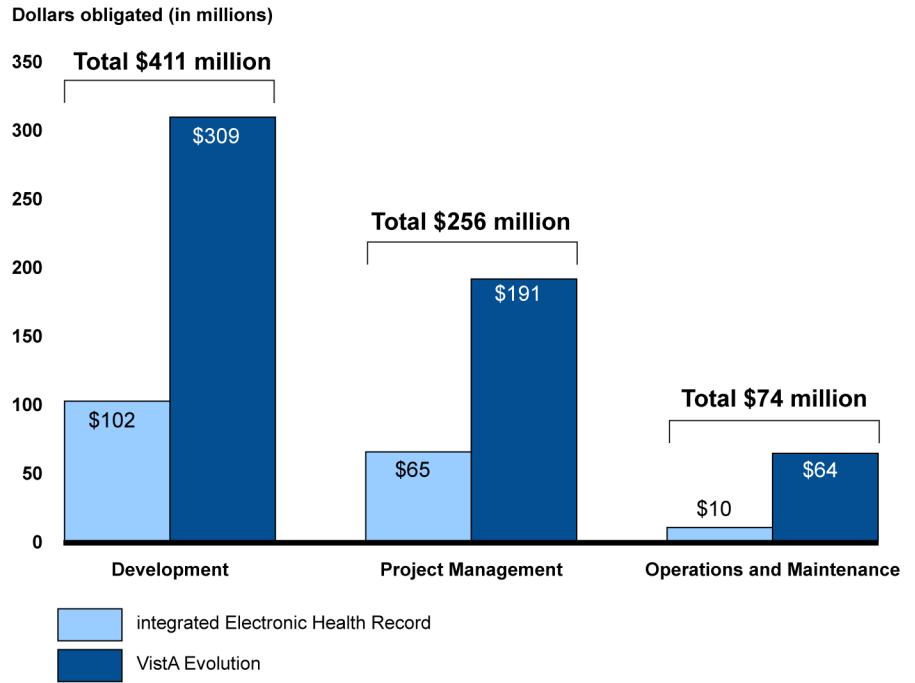
Figure 2: Amounts of Funding Obligated to the 15 Key Contractors for iEHR and VistA Evolution Development, Project Management, and Operations and Maintenance from 2011 through 2016



Source: GAO analysis of Veterans Affairs contract data on iEHR and VistA Evolution. | GAO-18-208

Further, based on the key contractors' documentation for the iEHR program, VA obligated \$102 million for development, \$65 million for project management, and \$10 million for operations and maintenance. For the VistA Evolution Program, VA obligated \$309 million for development, \$191 million for project management, and \$64 million for operations and maintenance. Figure 3 shows the amounts obligated for contracts on the VistA Evolution and iEHR programs for development, project management, and operations and maintenance.

Figure 3: Amounts of Funding Obligated to Key Contractors Supporting the VistA Evolution and iEHR Programs for Development, Project Management, and Operations and Maintenance for 2011-2016



Source: GAO analysis of Veterans Affairs contract data on iEHR and VistA Evolution. | GAO-18-208

In addition, table 2 shows the amounts that each of the 15 key contractors were obligated for the three types of contract activities performed on iEHR and VistA Evolution.

Table 2: Key Contractors and the Amounts the Department of Veterans Affairs (VA) Obligated to Contracts Supporting iEHR and VistA Evolution for Development, Project Management, and Operations and Maintenance During 2011-2016

Key contractor name	VistA Modernization effort	Types of expected contractor activities		
		Development	Project management	Operations and maintenance
ASM Research	iEHR	\$18.1	\$0	\$0
	VistA Evolution	142.9	0.2	1.4
Systems Made Simple, Inc.	iEHR	2.9	2.9	3.7
	VistA Evolution	10.2	59.4	13.0
HP Enterprise Services, LLC	iEHR	14.8	7.1	2.3
	VistA Evolution	37.4	15.5	4.7
Harris Corporation	iEHR	32.4	4.5	2.4
	VistA Evolution	27.0	.1	6.9
Technatomy Corporation	iEHR	0	18.4	0
	VistA Evolution	17.2	17.1	12.4
Booz Allen Hamilton, Inc.	iEHR	3.1	4.7	0
	VistA Evolution	28.3	24.5	0.8
The MITRE Corporation	iEHR	0.6	5.6	0
	VistA Evolution	5.4	30.2	0
SBG Technology Solutions	iEHR	0	6.3	0
	VistA Evolution	1.1	23.7	0
LongView International Technology Solutions, Inc.	iEHR	5.8	4.5	1.7
	VistA Evolution	7.2	5.3	3.3
By Light Professional IT Services, LLC	iEHR	4.4	0	0
	VistA Evolution	12.0	2.4	8.9
Business Information Technology Solutions, Inc.	iEHR	2.5	7.9	0
	VistA Evolution	2.0	11.9	0
Systems Research and Applications Corporation	iEHR	2.2	0.6	0.2
	VistA Evolution	14.0	1.0	0.3
Cerner Corporation	iEHR	3.8	2.2	0.3
	VistA Evolution	0	0	7.1
CACI International, Inc.	iEHR	6.3	0	0
	VistA Evolution	4.0	0	.4
Open Source Electronic Health Record Alliance	iEHR	4.9	0	0

Key contractor name	VistA Modernization effort	Types of expected contractor activities		
		Development	Project management	Operations and maintenance
	VistA Evolution	0	0	4.6
Totals for 15 key contractors		410.6	255.9	74.4

Source: GAO analysis of VA contract data on iEHR and VistA Evolution. | GAO-18-208

VA Recently Announced a New VistA Modernization Initiative; Development of Plans Is in Progress

Industry best practices and IT project management principles stress the importance of sound planning for system modernization projects.¹³ These plans should identify key aspects of a project, such as the scope, responsible organizations, costs, schedules, and risks. Additionally, planning should begin early in the project’s life cycle and be updated as the project progresses.

Since the VA Secretary announced that the department would acquire the same electronic health record system as DOD, VA has begun planning for the transition from VistA Evolution to EHRM. However, the department is still early in its efforts, pending the contract award. In this regard, the department has begun developing plans that are intended to guide the new EHRM program. For example, the department has developed a preliminary description of the organizations that are to be responsible for governing the EHRM program. Further, the VA Secretary announced in congressional testimony in November 2017 that the Executive Director for the Electronic Health Records Modernization System will report directly to the department’s Deputy Secretary. In addition, the department has developed a preliminary timeline for deploying its new electronic health record system to VA’s medical facilities, and a 90-day schedule that depicts key program activities. The department also has begun documenting the EHRM program risks.

Beyond the aforementioned planning activities undertaken thus far, the Executive Director stated that the department intends to complete a full suite of planning and acquisition management documents to guide the

¹³See, for example, Institute of Electrical and Electronics Engineers, *IEEE/EIA Guide for Information Technology*, IEEE/EIA 12207.1-1997 (April 1998); OMB, *Management of Federal Information Resources*, Circular No. A-130 (Washington, D.C.: Nov. 28, 2000); GAO, *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, [GAO-09-3SP](#) (Washington, D.C.: March 2009); GAO, *Schedule Assessment Guide: Best Practices for Project Schedules—Exposure Draft*, [GAO-12-120G](#) (Washington, D.C.: May 2012).

program, including a life cycle cost estimate and an integrated master schedule to establish key milestones over the life of the project. To this end, the Executive Director told us that VA has awarded program management contracts to support the development of these plans to MITRE Corporation and Booz Allen Hamilton.

According to the Executive Director, VA also has begun reviewing the *VistA Evolution Roadmap*, which is the key plan that the department has used to guide VistA Evolution since 2014. This review is expected to result in an updated plan that is to prioritize any remaining VistA enhancements needed to support the transition from VistA Evolution to the new system. According to the Executive Director, the department intends to complete the development of its plans for EHRM within 90 days after award of the Cerner contract, which is anticipated to occur in early 2018.

Further, beyond the development of plans, VA has begun to staff an organizational structure for the modernization initiative, with the Under Secretary of Health and the Assistant Secretary for Information and Technology (VA's Chief Information Officer) designated as executive sponsors. It has also appointed a Chief Technology Officer from OI&T, and a Chief Medical Officer from VHA, both of whom are to report to the Executive Director.

VA's efforts to develop plans for EHRM and to staff an organization to manage the program encompass key aspects of project planning that are important to ensuring effective management of the department's latest modernization initiative. However, the department remains early in its modernization planning efforts, many of which are dependent on the system acquisition contract award, which has not yet occurred. The department's continued dedication to completing and effectively executing the planning activities that it has identified will be essential to helping minimize program risks and guide this latest electronic health record modernization initiative to a successful outcome—one which VA, for almost two decades, has been unable to achieve.

Summary

VA has made extensive use of numerous contractors and has obligated more than \$1 billion for contracts to the 138 contractors that have supported the iEHR and VistA Evolution programs. A subset of 15 key contractors supported both iEHR and VistA Evolution with the development of new system capabilities, project management, and operations and maintenance of existing systems, for which VA obligated

about \$741 million. VA has recently initiated a fourth modernization program in which it plans to replace VistA with a commercially available electronic health record system.

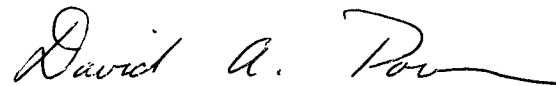
The department's VistA modernization efforts are currently in a state of transition from its old program, VistA Evolution, to the new one, EHRM. This transition impacts the department's current modernization plans, which are under development. Since the Secretary's decision to change the course of the modernization efforts, the department's progress on the new effort has been limited to establishing the EHRM program and planning to award a major modernization contract in early 2018. However, the department's modernization planning efforts have only recently begun and are dependent on the system acquisition contract award, which has not yet occurred. Because the department's activities have included meaningful action to develop such plans, and the program's Executive Director has stated that these plans will be completed within 90 days of awarding the modernization contract, we are not making any recommendations at this time.

Agency Comments and Our Evaluation

We provided a draft of this product to VA for comment. Via email, a liaison in VA's Office of Congressional and Legislative Affairs stated that the department appreciated the opportunity to comment on the draft report and provided technical comments, which we incorporated as appropriate.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Veterans Affairs, the Under Secretary for Health, the Chief Information Officer, and other interested parties. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>

If you or your staffs have any questions on matters discussed in this report, please contact me at (202) 512-9286 or pownerd@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix II.

A handwritten signature in black ink that reads "David A. Powner". The signature is written in a cursive style with a long, sweeping underline.

David A. Powner
Director
Information Technology Management Issues

Appendix I: Objectives, Scope, and Methodology

The objectives for this study were to (1) identify the efforts that the Department of Veterans Affairs (VA) has undertaken to modernize VistA, including key contractors, contract costs, and expected contractor activities and (2) to determine the department's current plans for, and progress to date, in modernizing VistA.

To address the first objective, we reviewed VA's prior budget submissions, in addition to VistA Evolution planning documentation, such as the *VistA 4 Product Roadmap*, *VistA 4 Life Cycle Cost Estimate*,¹ *VistA Evolution Integrated Master Plan*, and *VistA Evolution Business Case*.² We also reviewed meeting minutes for the VistA modernization projects and prior GAO work on efforts to modernize VistA.

To determine the contractors, costs, and expected contractor activities for these efforts, we requested data from VA's Office of Information and Technology (OI&T) and the Veterans Health Administration (VHA) on all contracts, related obligations, and expected activities for the HealtheVet program for fiscal years 2001 through 2010; the integrated Electronic Health Record (iEHR) program for fiscal years 2011 through 2013; and the VistA Evolution program for fiscal years 2014 through 2016. Neither OI&T nor VHA was able to provide contract data related to the HealtheVet program. The department stated that it could not verify any HealtheVet contractors receiving payments because the time frame for the effort falls outside the record retention required by regulations. According to the *Federal Acquisition Regulation*, government agencies are required to retain contract records for 6 years after the final payment.³

VA provided contract data for the iEHR and VistA Evolution programs, which included contractor names, obligated amounts of funding, and descriptions of the work that the contractors were to perform. OI&T provided such data for fiscal years 2011 through 2016 and VHA provided data for fiscal years 2012 through 2016. VHA program officials told us that they were unable to provide contract data prior to 2012. In addition, we did not request contract data subsequent to fiscal year 2016 because

¹Department of Veterans Affairs, *VistA 4 Roadmap: A Progress Report*, Version 6 (Washington, D.C., April 2017) and *VistA 4 Life Cycle Cost Estimate* (Washington, D.C.: March 30, 2017).

²Department of Veterans Affairs, *Business Case for VistA Evolution* (Washington, D.C.)

³48 C.F.R. § 4.805.

that is the last fiscal year for which data for a full year were available at the time that we performed our analysis.

We assessed the reliability of the contract data we received by reviewing it for missing elements and outliers. We then met with officials responsible for VistA-related contracting to address questions about any missing data and outliers, as well as to obtain additional information about how the data were developed. Further, we supplemented the data by using additional information received from VA and the Federal Procurement Data System.⁴ We determined that the data were sufficiently reliable for the purposes of our reporting objective.

To determine the key contractors, we first identified all of the contractors that worked on both the iEHR and VistA Evolution modernization efforts. We subsequently ranked the contractors according to the total dollars obligated for contracts that each contractor had been awarded. Further, we designated the top 15 ranked contractors, in terms of dollars obligated, as key contractors. These 15 key contractors received contracts that accounted for about two-thirds of the funds obligated to VistA modernization contracts from fiscal year 2011 through 2016. We then analyzed the information provided from VA on the work to be performed by these key contractors to identify obligations made for contracts to provide different types of work supporting the two modernization initiatives, including systems development, project management, and operations and maintenance. We then calculated the funds that were obligated to each of the key contractors for the types of work performed.

To determine current plans for modernizing VistA, we reviewed draft program schedules, organization charts, Congressional testimonies of the VA Secretary, a White House press conference transcript, departmental press releases, and the department's justification for awarding a non-competitive contract for a commercial off-the-shelf electronic health record system. To determine the progress achieved on the current efforts, we obtained documentation, such as draft schedules and organization

⁴The Federal Procurement Data System-Next Generation, managed by the U.S. General Services Administration, is a web-based tool for agencies to report contract transactions. It is also a searchable database of contract information that provides a capability to examine data across government agencies and provides managers a mechanism for determining where contract dollars are being spent.

charts, and met with program officials in VA's Electronic Health Record Modernization program office to obtain updated information on the efforts.

We conducted this performance audit from September 2016 to January 2018 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 II: GAO Contact and Staff Acknowledgements

GAO Contact

David A. Powner, (202) 512-9286 or pownerd@gao.gov.

Staff Acknowledgments

In addition to the contact named above, Mark Bird (assistant director), Eric Trout (analyst in charge), Chris Businsky, Vern Cumarasegaran, Nancy Glover, Paris Hawkins, Jacqueline Mai, Jennifer Stavros-Turner, Christy Tyson, and Charles Youman made key contributions to this report.

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