



Testimony before the Committee on
Veterans' Affairs, House of
Representatives

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COMPUTER-BASED PATIENT RECORDS:

VA and DOD Made Progress, but Much Work Remains to Fully Share Medical Information

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G A O

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Highlights of [GAO-05-1051T](#), a testimony before the Committee on Veterans' Affairs, House of Representatives

Why GAO Did This Study

For the past 7 years, the Departments of Veterans Affairs (VA) and Defense (DOD) have been working to exchange patient health information electronically and ultimately to have interoperable electronic medical records. Sharing medical information helps (1) promote the seamless transition of active duty personnel to veteran status and (2) ensure that active duty military personnel and veterans receive high-quality health care and assistance in adjudicating their disability claims. This is especially critical in the face of current military responses to national and foreign crises.

In testimony before the Veterans' Affairs Subcommittee on Oversight and Investigations in March and May 2004, GAO discussed the progress being made by the departments in this endeavor. In June 2004, at the Subcommittee's request, GAO reported on its review of the departments' progress toward the goal of an electronic two-way exchange of patient health records.

GAO is providing an update on the departments' efforts, focusing on (1) the status of ongoing, near-term initiatives to exchange data between the agencies' existing systems and (2) progress in achieving the longer term goal of exchanging data between the departments' new systems.

www.gao.gov/cgi-bin/getrpt?GAO-05-1051T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Linda D. Koontz at (202) 512-6240 or koontzl@gao.gov.

COMPUTER-BASED PATIENT RECORDS

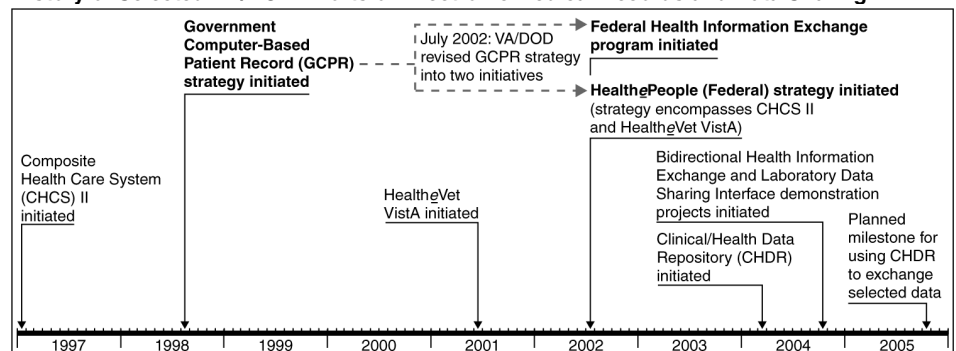
VA and DOD Have Made Progress, but Much Work Remains to Fully Share Medical Information

What GAO Found

In the past year, VA and DOD have begun to implement applications that exchange limited electronic medical information between the departments' existing health information systems. These applications are (1) Bidirectional Health Information Exchange, a project to achieve the two-way exchange of health information on patients who receive care from both VA and DOD, and (2) Laboratory Data Sharing Interface, an application used to electronically transfer laboratory work orders and results between the departments. The Bidirectional Health Information Exchange application has been implemented at five sites, at which it is being used to rapidly exchange information such as pharmacy and allergy data. Also, the Laboratory Data Sharing Interface application has been implemented at six sites, at which it is being used for real-time entry of laboratory orders and retrieval of results. According to the departments, these systems enable lower costs and improved service to patients by saving time and avoiding errors.

VA and DOD are continuing with activities to support their longer term goal of sharing health information between their systems (see figure), but the goal of two-way electronic exchange of patient records remains far from being realized. Each department is developing its own modern health information system—VA's HealthVet VistA and DOD's Composite Health Care System II—and they have taken steps to respond to GAO's June 2004 recommendations regarding the program to develop an electronic interface that will enable these systems to share information. That is, they have developed an architecture for the interface, established project accountability, and implemented a joint project management structure. However, they have not yet developed a clearly defined project management plan to guide their efforts, as GAO previously recommended. Further, they have not yet fully populated the repositories that will store the data for their future health systems, and they have experienced delays in their efforts to begin a limited data exchange. Lacking a detailed project management plan increases the risk that the departments will encounter further delays and be unable to deliver the planned capabilities on time and at the cost expected.

History of Selected VA/DOD Efforts on Electronic Medical Records and Data Sharing



Source: GAO analysis of VA and DOD data.

Mr. Chairman and Members of the Committee:

I am pleased to participate in today's discussion on the actions taken by the Departments of Veterans Affairs (VA) and Defense (DOD) to promote the seamless transition of active duty personnel to veteran status. Among the two departments' goals for seamless transition is to be able to exchange patient health information electronically and ultimately to have interoperable¹ electronic medical records. Sharing of medical information is an important tool to help ensure that active duty military personnel and veterans receive high-quality health care and assistance in adjudicating their disability claims—goals that, in the face of current military responses to national and foreign crises, are more essential than ever.

For the past 7 years, VA and DOD have been working to achieve these capabilities, beginning with a joint project in 1998 to develop a government computer-based patient record. As we have noted in previous testimony,² the departments had achieved a measure of success in sharing data through the one-way transfer of health information from DOD to VA health care facilities. However, they have been severely challenged in their pursuit of the longer term objective—providing a virtual medical record in which data are computable. That is, rather than data being provided as text for viewing only, data would be in a format that the health information application can act on: for example, providing alerts to clinicians (of such things as drug allergies) and plotting graphs of changes in vital signs such as blood pressure. According to the departments, the use

¹ Interoperability is the ability of two or more systems or components to exchange information and to use the information that has been exchanged.

² GAO, *Computer-Based Patient Records: Improved Planning and Project Management Are Critical to Achieving Two-Way VA–DOD Health Data Exchange*, [GAO-04-811T](#) (Washington, D.C.: May 19, 2004); *Computer-Based Patient Records: Sound Planning and Project Management Are Needed to Achieve a Two-Way Exchange of VA and DOD Health Data*, [GAO-04-402T](#) (Washington, D.C.: Mar. 17, 2004); and *Computer-Based Patient Records: Short-Term Progress Made, but Much Work Remains to Achieve a Two-Way Data Exchange Between VA and DOD Health Systems*, [GAO-04-271T](#) (Washington, D.C.: Nov. 19, 2003).

of such computable medical data contributes significantly to the usefulness of electronic medical records.

As of June 2004, when we last reported on this topic,³ VA and DOD were continuing to define the data standards that are essential both for the exchange of data and for the development of interoperable electronic medical records. At that time, we identified weaknesses in the planning and management structure of the departments' program, and we recommended that the departments take a number of actions to address these weaknesses.

Also in 2004, in response to a mandate in the Bob Stump National Defense Authorization Act for Fiscal Year 2003,⁴ VA and DOD initiated information technology demonstration projects focusing on near-term goals: the exchange of electronic medical information between the departments' existing health information systems. These projects are to help in the evaluation of the feasibility, advantages, and disadvantages of measures to improve sharing and coordination of health care and health care resources. The two demonstration projects (Bidirectional Health Information Exchange and Laboratory Data Sharing Interface) are interim initiatives that are separate from the departments' ongoing long-term efforts in sharing data and developing health information systems.

At your request, my testimony today will discuss the two departments' continued efforts to exchange medical information, with a specific focus on (1) the status of ongoing, near-term initiatives to exchange data between the agencies' existing systems and (2) progress in achieving the longer term goal of exchanging data between the departments' new systems, still in development, which are to be built around electronic patient health records.

³ GAO, *Computer-Based Patient Records: VA and DOD Efforts to Exchange Health Data Could Benefit from Improved Planning and Project Management*, [GAO-04-687](#) (Washington, D.C.: June 7, 2004).

⁴ Pub. L. No. 107-314, §721 (a)(1), 116 Stat. 2589,2595 (2002). To further encourage on-going collaboration, section 721 directed the Secretary of Defense and the Secretary of Veterans Affairs to establish a joint program to identify and provide incentives to implement, fund, and evaluate creative health care coordination and sharing initiatives between DOD and VA.

In conducting this work, we reviewed the departments' documentation describing the two demonstration projects, including business plans, budget summaries, and project status reports. We also reviewed documentation identifying the costs that the departments have incurred in developing technology to support the sharing of health data, including costs associated with achieving the one-way transfer of data from DOD to VA health care facilities, and ongoing projects to develop new health information systems. We did not audit the reported costs and thus cannot attest to their accuracy or completeness. We reviewed draft system requirements, design specifications, and software descriptions for the electronic interface between the departments' new health systems. We supplemented our analyses of the agencies' documentation with interviews of VA and DOD officials responsible for key decisions and actions on the health data-sharing initiatives. In addition, to observe the Bidirectional Health Information Exchange and Laboratory Data Sharing Interface capabilities, we conducted site visits to military treatment facilities and VA medical centers in El Paso and San Antonio, Texas, and Puget Sound, Washington. We conducted our work from June through September 2005, in accordance with generally accepted government auditing standards.

Results in Brief

In the past year, VA and DOD have begun to implement applications that exchange limited electronic medical information between the departments' existing health information systems. These applications were developed through two information technology demonstration projects: (1) Bidirectional Health Information Exchange is a project to achieve the two-way exchange of health information on shared patients,⁵ and (2) Laboratory Data Sharing Interface is an application used to facilitate the electronic transfer/sharing of orders for laboratory work and the results of the

⁵ Shared patients receive care from both VA and DOD clinicians. For example, veterans may receive outpatient care from VA clinicians and be hospitalized at a military treatment facility.

work. The departments have implemented the Bidirectional Health Information Exchange application at five sites, at which it is being used for the rapid exchange of specific types of information (pharmacy data, drug and food allergy information, patient demographics, and laboratory results⁶ on shared patients). Also, the Laboratory Data Sharing Interface application has been implemented at six sites, at which it is being used for real-time entry of laboratory orders and retrieval of laboratory results. Although the data exchanged by these demonstration projects are in text form only (that is, they are not computable), the systems have significant benefits, according to the two departments, because they enable lower costs and improved service to patients by saving time and avoiding errors.

Since our last report on the departments' efforts to achieve a virtual medical record, VA and DOD have taken several actions, but the departments continue to be far from achieving the two-way electronic data exchange capability originally envisioned. The departments have implemented three recommendations that we made in June 2004: They have developed an architecture for the electronic interface between DOD's Clinical Data Repository and VA's Health Data Repository; they have established the VA/DOD Health Executive Council⁷ as the lead entity for the project; and they have established a joint project management structure to provide day-to-day guidance for this initiative. Additionally, the Health Executive Council established working groups to provide programmatic oversight and to facilitate interagency collaboration on sharing initiatives between DOD and VA. However, VA and DOD have not yet developed a clearly defined project management plan that gives a detailed description of the technical and managerial processes necessary to satisfy project requirements, as we previously recommended. Moreover, the departments have

⁶ These data are text files providing surgical, pathology, cytology, microbiology, chemistry, and hematology test results and descriptions of radiology results.

⁷ The VA/DOD Health Executive Council is composed of senior leaders from VA and DOD, who work to institutionalize sharing and collaboration of health services and resources. The council is cochaired by the VA Undersecretary for Health and DOD Assistant Secretary of Defense for Health Affairs, and meets every 2 months.

experienced delays in their efforts to begin exchanging computable patient health data; they have not yet fully populated the data repositories that are to store the medical data for their future health systems. As a result, much work remains before the departments achieve their ultimate goal—interoperable electronic health records and two-way electronic exchange of computable patient health information.

Background

In 1998, following a presidential call for VA and DOD to start developing a “comprehensive, life-long medical record for each service member,” the two departments began a joint course of action aimed at achieving the capability to share patient health information for active duty military personnel and veterans.⁸ Their first initiative, undertaken in that year, was the Government Computer-Based Patient Record (GCPR) project, whose goal was an electronic interface that would allow physicians and other authorized users at VA and DOD health facilities to access data from any of the other agency’s health information systems. The interface was expected to compile requested patient information in a virtual record that could be displayed on a user’s computer screen.

In our reviews of the GCPR project, we determined that the lack of a lead entity, clear mission, and detailed planning to achieve that mission made it difficult to monitor progress, identify project risks, and develop appropriate contingency plans. In April 2001 and in June 2002,⁹ we made recommendations to help strengthen the management and oversight of the project. In 2001, we recommended

⁸ Initially, the Indian Health Service (IHS) also was a party to this effort, having been included because of its population-based research expertise and its long-standing relationship with VA. However, IHS was not included in a later revised strategy for electronically sharing patient health information.

⁹ GAO, *Veterans Affairs: Sustained Management Attention Is Key to Achieving Information Technology Results*, [GAO-02-703](#) (Washington, D.C.: June 12, 2002); and *Computer-Based Patient Records: Better Planning and Oversight by VA, DOD, and IHS Would Enhance Health Data Sharing*, [GAO-01-459](#) (Washington, D.C.: Apr. 30, 2001).

that the participating agencies (1) designate a lead entity with final decision-making authority and establish a clear line of authority for the GCPR project and (2) create comprehensive and coordinated plans that included an agreed-upon mission and clear goals, objectives, and performance measures, to ensure that the agencies could share comprehensive, meaningful, accurate, and secure patient health care data. In 2002, we recommended that the participating agencies revise the original goals and objectives of the project to align with their current strategy, commit the executive support necessary to adequately manage the project, and ensure that it followed sound project management principles.

VA and DOD took specific measures in response to our recommendations for enhancing overall management and accountability of the project. By July 2002, VA and DOD had revised their strategy and had made progress toward being able to electronically share patient health data. The two departments had refocused the project and named it the Federal Health Information Exchange (FHIE) program and, consistent with our prior recommendation, had finalized a memorandum of agreement designating VA as the lead entity for implementing the program. This agreement also established FHIE as a joint activity that would allow the exchange of health care information in two phases.

- The first phase, completed in mid-July 2002, enabled the one-way transfer of data from DOD's existing health information system (the Composite Health Care System, CHCS) to a separate database that VA clinicians could access.
- A second phase, finalized in March 2004, completed VA's and DOD's efforts to add to the base of patient health information available to VA clinicians via this one-way sharing capability.

According to the December 2004 VA/DOD Joint Executive Council¹⁰ Annual Report, FHIE was fully operational, and VA providers at all

¹⁰ The Joint Executive Council is composed of the Deputy Secretary of Veterans Affairs, the Undersecretary of Defense for Personnel and Readiness, and the cochair of joint councils on health, benefits, and capital planning. The council meets on a quarterly basis to recommend strategic direction of joint coordination and sharing efforts.

VA medical centers and clinics nationwide had access to data on separated service members. According to the report, the FHIE data repository at that time contained historical clinical health data on 2.3 million unique patients from 1989 on, and the repository made a significant contribution to the delivery and continuity of care and adjudication of disability claims of separated service members as they transitioned to veteran status. The departments reported total GCPR/FHIE costs of about \$85 million through fiscal year 2003.

In addition, officials stated that in December 2004, the departments began to use the FHIE framework to transfer pre- and postdeployment health assessment data from DOD to VA. According to these officials, VA has now received about 400,000 of these records.

However, not all DOD medical information is captured in CHCS. For example, according to DOD officials, as of September 6, 2005, 1.7 million patient stay records were stored in the Clinical Information System (a commercial product customized for DOD). In addition, many Air Force facilities use a system called the Integrated Clinical Database for their medical information.

The revised DOD/VA strategy also envisioned achieving a longer term, two-way exchange of health information between DOD and VA, which may also address systems outside of CHCS. Known as Health₂People (Federal), this initiative is premised on the departments' development of a common health information architecture comprising standardized data, communications, security, and high-performance health information systems. The joint effort is expected to result in the secured sharing of health data between the new systems that each department is currently developing and beginning to implement—VA's Health₂Vet VistA and DOD's CHCS II.

- DOD began developing CHCS II in 1997 and had completed a key component for the planned electronic interface—its Clinical Data Repository. When we last reported in June 2004, the department expected to complete deployment of all of its major system

capabilities by September 2008.¹¹ DOD reported expenditures of about \$600 million for the system through fiscal year 2004.¹²

- VA began work on HealthVet VistA and its associated Health Data Repository in 2001 and expected to complete all six initiatives comprising this system in 2012. VA reported spending about \$270 million on initiatives that comprise HealthVet VistA through fiscal year 2004.¹³

Under the HealthPeople (Federal) initiative, VA and DOD envision that, on entering military service, a health record for the service member would be created and stored in DOD's Clinical Data Repository. The record would be updated as the service member receives medical care. When the individual separated from active duty and, if eligible, sought medical care at a VA facility, VA would then create a medical record for the individual, which would be stored in its Health Data Repository. On viewing the medical record, the VA clinician would be alerted and provided with access to the individual's clinical information residing in DOD's repository. In the same manner, when a veteran sought medical care at a military treatment facility, the attending DOD clinician would be alerted and provided with access to the health information in VA's repository. According to the departments, this planned approach would make virtual medical records displaying all available patient health

¹¹ DOD's CHCS II capabilities are being deployed in five increments. The first provides a graphical user interface for clinical outpatient processes, thus providing an electronic medical record capability; the second supports general dentistry; the third provides pharmacy, laboratory, radiology, and immunizations capabilities; the fourth provides inpatient and scheduling capabilities; and the fifth will provide additional capabilities as defined. According to DOD, the first increment has been deployed to 64 of the 139 DOD health facilities, representing over 6.9 million beneficiaries, or about 75 percent of the total 9.2 million beneficiaries.

¹² These expenditures represent acquisition costs for software development, test and evaluation, hardware acquisition, system implementation, and associated contractor personnel costs. They do not include government personnel or operations and maintenance costs.

¹³ The six initiatives that make up HealthVet VistA are the Health Data Repository, billing replacement, laboratory, pharmacy, imaging, and appointment scheduling replacement. This amount includes investments in these six initiatives by VA as reported in their submission to the Office of Management and Budget for fiscal year 2004.

information from the two repositories accessible to both departments' clinicians.

To achieve this goal requires the departments to be able to exchange computable health information between the data repositories for their future health systems: that is, VA's Health Data Repository (a component of Health_Vet VistA) and DOD's Clinical Data Repository (a component of CHCS II). In March 2004, the departments began an effort to develop an interface linking these two repositories, known as CHDR (a name derived from the abbreviations for DOD's Clinical Data Repository—CDR—and VA's Health Data Repository—HDR). According to the departments,¹⁴ they planned to be able to exchange selected health information through CHDR by October 2005. Developing the two repositories, populating them with data, and linking them through the CHDR interface would be important steps toward the two departments' long-term goals as envisioned in Health_People (Federal). Achieving these goals would then depend on completing the development and deployment of the associated health information systems—Health_Vet VistA and CHCS II.

In our most recent review of the CHDR program, issued in June 2004,¹⁵ we reported that the efforts of DOD and VA in this area demonstrated a number of management weaknesses. Among these were the lack of a well-defined architecture for describing the interface for a common health information exchange; an established project management lead entity and structure to guide the investment in the interface and its implementation; and a project management plan defining the technical and managerial processes necessary to satisfy project requirements. With these critical components missing, VA and DOD increased the risk that they would not achieve their goals. Accordingly, we recommended that the departments

¹⁴ December 2004 VA and DOD Joint Strategic Plan.

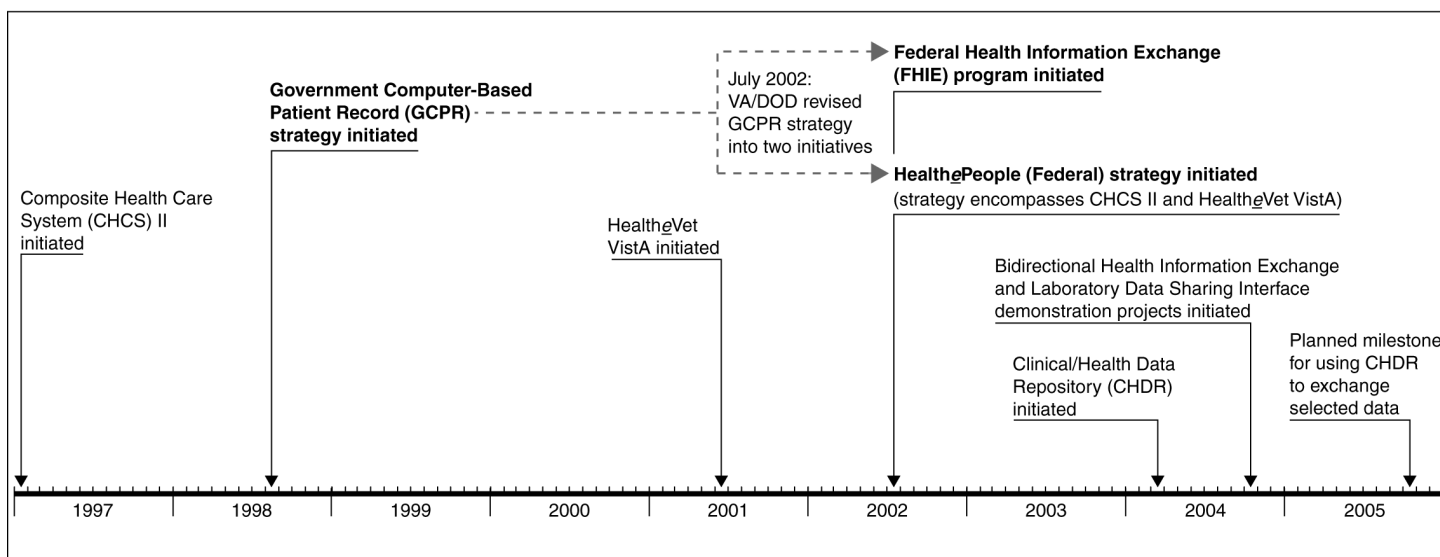
¹⁵ GAO, *Computer-Based Patient Records: VA and DOD Efforts to Exchange Health Data Could Benefit from Improved Planning and Project Management*, [GAO-04-687](#) (Washington, D.C.: June 7, 2004).

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- develop an architecture for the electronic interface between their health systems that includes system requirements, design specifications, and software descriptions;
 - select a lead entity with final decision-making authority for the initiative;
 - establish a project management structure to provide day-to-day guidance of and accountability for their investments in and implementation of the interface capability; and
 - create and implement a comprehensive and coordinated project management plan for the electronic interface that defines the technical and managerial processes necessary to satisfy project requirements and includes (1) the authority and responsibility of each organizational unit; (2) a work breakdown structure for all of the tasks to be performed in developing, testing, and implementing the software, along with schedules associated with the tasks; and (3) a security policy.

Besides pursuing their long-term goals for future systems through the HealthPeople (Federal) strategy, the departments are working on two demonstration projects that focus on exchanging information between existing systems: (1) Bidirectional Health Information Exchange, a project to exchange health information on shared patients, and (2) Laboratory Data Sharing Interface, an application used to transfer laboratory work orders and results. These demonstration projects were planned in response to provisions of the Bob Stump National Defense Authorization Act of 2003, which mandated that VA and DOD conduct demonstration projects that included medical information and information technology systems to be used as a test for evaluating the feasibility, advantages, and disadvantages of measures and programs designed to improve the sharing and coordination of health care and health care resources between the departments.

Figure 1 is a time line showing initiation points for the VA and DOD efforts discussed here, including strategies, major programs, and the recent demonstration projects.

Figure 1: History of Selected VA/DOD Electronic Medical Records and Data Sharing Efforts



Source: GAO analysis of VA and DOD data.

VA and DOD Are Exchanging Limited Medical Information between Existing Health Systems

VA and DOD have begun to implement applications developed under two demonstration projects that focus on the exchange of electronic medical information. The first—the Bidirectional Health Information Exchange—has been implemented at five VA/DOD locations and the second—Laboratory Data Sharing Interface—has been implemented at six VA/DOD locations.

Bidirectional Health Information Exchange

According to a VA/DOD annual report and program officials, Bidirectional Health Information Exchange (BHIE) is an interim step in the departments' overall strategy to create a two-way exchange of electronic medical records. BHIE builds on the architecture and framework of FHIE, the current application used to transfer health data on separated service members from DOD to VA. As discussed earlier, FHIE provides an interface between VA's and DOD's current health information systems that allows one-way transfers only, which do not occur in real time: VA clinicians do not

have access to transferred information until about 6 weeks after separation. In contrast, BHIE focuses on the two-way, near-real-time exchange of information (text only) on shared patients (such as those at sites jointly occupied by VA and DOD facilities). This application exchanges data between VA's VistA system and DOD's CHCS system (and CHCS II where implemented). To date, the departments reported having spent \$2.6 million on BHIE.

The primary benefit of BHIE is the near-real-time access to patient medical information for both VA and DOD, which is not available through FHIE. During a site visit to a VA and DOD location in Puget Sound, we viewed a demonstration of this capability and were told by a VA clinician that the near-real-time access to medical information has been very beneficial in treating shared patients.

As of August 2005, BHIE was tested and deployed at VA and DOD facilities in Puget Sound, Washington, and El Paso, Texas, where the exchange of demographic, outpatient pharmacy, radiology, laboratory, and allergy data (text only) has been achieved. The application has also been deployed to three other locations this month (see table 1). According to the program manager, a plan to export BHIE to additional locations has been approved. The additional locations were selected based on a number of factors, including the number and types of VA and DOD medical facilities in the area, FHIE usage, and retiree population at the locations. The program manager stated that implementation of BHIE requires training of staff from both departments. In addition, implementation at DOD facilities requires installation of a server; implementation at VA facilities requires installation of a software patch (downloaded from a VA computer center), but no additional equipment. As shown in table 1, five additional implementations are scheduled for the first quarter of fiscal year 2006.

Table 1: Scheduled Rollout of BHIE at Selected DOD Facilities

Facility	Implementation date
Madigan Army Medical Center, Washington	October 2004
William Beaumont Army Medical Center, Texas	October 2004
Eisenhower Army Medical Center, Georgia	September 2005
Naval Hospital Great Lakes, Illinois	September 2005
Naval Medical Center, California	September 2005
Brooke Army Medical Center, Texas	First quarter, fiscal year 2006
Landstuhl Regional Medical Center, Germany	First quarter, fiscal year 2006
Bassett Army Community Hospital, Alaska	First quarter, fiscal year 2006
Walter Reed Army Medical Center, Maryland	First quarter, fiscal year 2006
Bethesda Naval Medical Center, Maryland	First quarter, fiscal year 2006

Sources: VA and DOD.

Note: VA facilities are sited near all the DOD facilities shown.

Additionally, because DOD stores electronic medical information in systems other than CHCS (such as the Clinical Information System and the Integrated Clinical Database), work is currently under way to allow BHIE to have the ability to exchange information with those systems. The Puget Sound Demonstration site is also working on sharing consultation reports stored in the VA and DOD systems.

Laboratory Data Sharing Interface

The Laboratory Data Sharing Interface (LDSI) initiative enables the two departments to share laboratory resources. Through LDSI, a VA provider can use VA's health information system to write an order for laboratory tests, and that order is electronically transferred to DOD, which performs the test. The results of the laboratory tests are electronically transferred back to VA and included in the patient's medical record. Similarly, a DOD provider can choose to use a VA lab for testing and receive the results electronically. Once LDSI is fully implemented at a facility, the only nonautomated action in performing laboratory tests is the transport of the specimens.

Among the benefits of LDSI is increased speed in receiving laboratory results and decreased errors from multiple entry of orders. However, according to the LDSI project manager in San Antonio, a primary benefit of the project will be the time saved by eliminating the need to rekey orders at processing labs to input the information into the laboratories' systems. Additionally, the San

Antonio VA facility will no longer have to contract out some of its laboratory work to private companies, but instead use the DOD laboratory. To date, the departments reported having spent about \$3.3 million on LDSI.

An early version of what is now LDSI was originally tested and implemented at a joint VA and DOD medical facility in Hawaii in May 2003. The demonstration project built on this application and enhanced it; the resulting application was tested in San Antonio and El Paso. It has now been deployed to six sites in all. According to the departments, a plan to export LDSI to additional locations has been approved. Table 2 shows the locations at which it has been or is to be implemented.

Table 2: VA/DOD Facilities with LDSI Implementations	
Facility	Implementation Date
Tripler Army Medical Center and VA Spark M. Matsunaga Medical Center, Hawaii	May 2003
Kirtland Air Force Base and Albuquerque VA Medical Center, New Mexico	May 2003
Naval Medical Center and San Diego VA Health Care System, California	July 2004
Great Lakes Naval Hospital and VA Medical Center, Illinois	October 2004
William Beaumont Army Medical Center, El Paso, Texas	October 2004
Brooke Army Medical Center, San Antonio, Texas	August 2005
Bassett Army Community Hospital, Alaska	Pre-implementation
Nellis Air Force Base, Nevada	Pre-implementation

Sources: VA and DOD.

VA and DOD Are Taking Actions to Achieve a Virtual Medical Record, but Much Work Remains

Besides the near-term initiatives just discussed, VA and DOD continue their efforts on the longer term goal: to achieve a virtual medical record based on the two-way exchange of computable data between the health information systems that each is currently developing. The cornerstone for this exchange is CHDR, the planned electronic interface between the data repositories for the new systems.

The departments have taken important actions on the CHDR initiative. In September 2004 they successfully completed Phase I of CHDR by demonstrating the two-way exchange of pharmacy information with a prototype in a controlled laboratory environment.¹⁶ According to department officials, the pharmacy prototype provided invaluable insight into each other's data repository systems, architecture, and the work that is necessary to support the exchange of computable information. These officials stated that lessons learned from the development of the prototype were documented and are being applied to Phase II of CHDR, the production phase, which is to implement the two-way exchange of patient health records between the departments' data repositories. Further, the same DOD and VA teams that developed the prototype are now developing the production version.

In addition, the departments developed an architecture for the CHDR electronic interface, as we recommended in June 2004. The architecture for CHDR includes major elements required in a complete architecture. For example, it defines system requirements and allows these to be traced to the functional requirements, it includes the design and control specifications for the interface design, and it includes design descriptions for the software.

Also in response to our recommendations, the departments have established project accountability and implemented a joint project management structure. Specifically, the Health Executive Council has been established as the lead entity for the project. The joint project management structure consists of a Program Manager from VA and a Deputy Program Manager from DOD to provide day-to-day guidance for this initiative. Additionally, the Health Executive Council established the DOD/VA Information Management/Information Technology Working Group and the DOD/VA Health Architecture Interagency Group, to provide programmatic oversight and to facilitate interagency collaboration on sharing initiatives between DOD and VA.

¹⁶ The completion of the pharmacy prototype project satisfied a mandate of the 2003 Bob Stump National Defense Authorization Act, Pub. L. 107-314, sec. 724 (2002).

To build on these actions and successfully carry out the CHDR initiative, however, the departments still have a number of challenges to overcome. The success of CHDR will depend on the departments' instituting a highly disciplined approach to the project's management. Industry best practices and information technology project management principles stress the importance of accountability and sound planning for any project, particularly an interagency effort of the magnitude and complexity of this one. We recommended in 2004 that the departments develop a clearly defined project management plan that describes the technical and managerial processes necessary to satisfy project requirements and includes (1) the authority and responsibility of each organizational unit; (2) a work breakdown structure for all of the tasks to be performed in developing, testing, and implementing the software, along with schedules associated with the tasks; and (3) a security policy. Currently, the departments have an interagency project management plan that provides the program management principles and procedures to be followed by the project. However, the plan does not specify the authority and responsibility of organizational units for particular tasks; the work breakdown structure is at a high level and lacks detail on specific tasks and time frames; and security policy is still being drafted. Without a plan of sufficient detail, VA and DOD increase the risk that the CHDR project will not deliver the planned capabilities in the time and at the cost expected.

In addition, officials now acknowledge that they will not meet a previously established milestone: by October 2005, the departments had planned to be able to exchange outpatient pharmacy data, laboratory results, allergy information, and patient demographic information on a limited basis. However, according to officials, the work required to implement standards for pharmacy and medication allergy data was more complex than originally anticipated and led to the delay. They stated that the schedule for CHDR is presently being revised. Development and data quality testing must be completed and the results reviewed. The new target date for medication allergy, outpatient pharmacy, and patient demographic data exchange is now February 2006.

Finally, the health information currently in the data repositories has various limitations.

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- Although DOD's Clinical Data Repository includes data in the categories that were to be exchanged at the missed milestone described above: outpatient pharmacy data, laboratory results, allergy information, and patient demographic information, these data are not yet complete. First, the information in the Clinical Data Repository is limited to those locations that have implemented the first increment of CHCS II, DOD's new health information system. As of September 9, 2005, according to DOD officials, 64 of 139 medical treatment facilities worldwide have implemented this increment. Second, at present, health information in systems other than CHCS (such as the Clinical Information System and the Integrated Clinical Database) is not yet being captured in the Clinical Data Repository. For example, according to DOD officials, as of September 9, 2005, the Clinical Information System contained 1.7 million patient stay records.
 - The information in VA's Health Data Repository is also limited: although all VA medical records are currently electronic, VA has to convert these into the interoperable format appropriate for the Health Data Repository. So far, the data in the Health Data Repository consist of patient demographics and vital signs records for the 6 million veterans who have electronic medical records in VA's current system, VistA (this system contains all the department's medical records in electronic form). VA officials told us that they plan next to sequentially convert allergy information, outpatient pharmacy data, and lab results for the limited exchange that is now planned for February 2006.
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In summary, developing an electronic interface that will enable VA and DOD to exchange computable patient medical records is a highly complex undertaking that could lead to substantial benefits—improving the quality of health care and disability claims processing for the nation's military members and veterans. VA and DOD have made progress in the electronic sharing of patient health data in their limited, near-term demonstration projects, and have taken an important step toward their long-term goals by improving the management of the CHDR program. However, the departments face considerable work and significant challenges before they can achieve these long-term goals. While the departments have made

progress in developing a project management plan defining the technical and managerial processes necessary to satisfy project requirements, this plan does not specify the authority and responsibility of organizational units for particular tasks, the work breakdown structure lacks detail on specific tasks and time frames, and security policy has not yet been finalized. Without a project management plan of sufficient specificity, the departments risk further delays in their schedule and continuing to invest in a capability that could fall short of expectations.

Mr. Chairman, this concludes my statement. I would be pleased to respond to any questions that you or other members of the Committee may have at this time.

Contacts and Acknowledgments

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