



# Departments of Defense and Veterans Affairs: Status of the Integrated Electronic Health Record (iEHR)

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## Summary

Electronic health records (EHRs) play an important role in optimizing the health care provided to active duty servicemembers and veterans. When a servicemember leaves military service by way of discharge, separation, or retirement he or she may become eligible for VA benefits and services including VA health care. Transitioning their health care information from one large health care system (Department of Defense; DOD) to the other (Department of Veterans Affairs; VA) involves coordination of data and information between DOD and VA. Long-standing concern that this exchange be effective has been expressed in many quarters, including Congress.

The DOD and the VA have been working to exchange patient health information since 1998. To date, both departments' initiatives include (1) the Federal Health Information Exchange (FHIE), which enables the one-way transfer of servicemembers' electronic health information from DOD to VA for all separated servicemembers; (2) the Bidirectional Health Information Exchange (BHIE), which allows health care providers from both departments viewable access to records of shared patients; (3) the Clinical Data Repository/Veterans Affairs Health Data Repository (CHDR), which enables the DOD and VA to exchange computable outpatient pharmacy and drug allergy information for shared patients; and (4) the Laboratory Data Sharing Interphase (LDSI), which allows DOD and VA facilities to share laboratory information.

Congressional committees with oversight over veterans matters have devoted attention to health information sharing between the DOD and VA. In 2008, they included relevant provisions in the National Defense Authorization Act for FY2008 (P.L. 110-181). The law mandated DOD and VA to jointly develop and implement electronic health record systems or capabilities to allow for full interoperability of personal health care information, and to accelerate the exchange of health care information between DOD and VA by September 2009. To this end, the law also established an interagency program office (IPO) to act as a single point of accountability.

In December 2010, the Deputy Secretaries of DOD and VA directed the development of an integrated Electronic Health Record (iEHR), which would provide both departments an opportunity to reduce costs and improve interoperability and connectivity. On March 17, 2011, the Secretaries of DOD and VA reached an agreement to work cooperatively on the development of a common electronic health record and to transition to the new iEHR by 2017.

On February 5, 2013, the Secretary of Defense and the Secretary of Veterans Affairs announced that instead of building a single integrated electronic health record (iEHR), both DOD and VA will concentrate on integrating VA and DOD health data by focusing on interoperability and using existing technological solutions. This announcement was a departure from the previous commitments that both departments had made to design and build a new single iEHR, rather than upgrading their current electronic health records and trying to develop interoperability solutions.

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## Introduction

On February 5, 2013, Secretary of Defense Leon E. Panetta and Secretary of Veterans Affairs Eric Shinseki announced that instead of building a single integrated electronic health record (iEHR)—that both the Department of Defense (DOD) and the Department of Veterans Affairs (VA) would use for their beneficiaries—their departments would concentrate on integrating VA and DOD health data by focusing on interoperability and using existing technological solutions.<sup>1</sup> This announcement appears to be a departure from the previous commitment that both departments had made to design and build a new iEHR, rather than upgrading their current electronic health records and trying to develop interoperability solutions.<sup>2</sup> For example, at a joint hearing of the House Veterans' Affairs and Armed Services Committees on July 25, 2012, Secretary Shinseki stated:

Secretary Panetta and I have committed to developing a single, common, joint electronic health record, known as iEHR. This effort began on January 21, 2009, when then-Secretary Gates and I agreed to develop that vision. Last year [2011], after two years of hard work by teams from both Departments, then-Secretary Gates and I met on 5 February, 17 March, 2 May, and 23 June. Thereafter, Secretary Panetta and I met on five additional occasions to provide continuing guidance and energy for the implementation of the iEHR. It will unify the two Departments' electronic health record systems into a common system to ensure that all DOD and VA health facilities have servicemembers' and veterans' health information available throughout their lifetimes.<sup>3</sup>

At the same hearing Secretary Panetta stated:

When operational, the integrated electronic health record will be the single source for servicemembers and veterans to access their medical history at any DOD and VA medical facility. It will help ensure they get the best care possible. It will also be the world's largest health record system, and that could mean that other federal and commercial health care providers may adopt our protocols, which will expand the capabilities of the system still further.<sup>4</sup>

This development is one of several changes in goals, initiatives, and deadlines in the DOD and VA effort to develop a single integrated electronic medical record since 1998 (see **Figure D-1**).

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<sup>1</sup> U.S. Department of Defense, "Remarks by Secretary Panetta and Secretary Shinseki from the Department of Veterans Affairs," press release, February 5, 2013, <http://www.defense.gov/Transcripts/Transcript.aspx?TranscriptID=5187> (accessed February 16, 2013).

<sup>2</sup> Institute of Medicine (IOM), *Evaluation of the Lovell Federal Health Care Center Merger: Findings, Conclusions, and Recommendations*, Washington, DC, 2012, p.S-12.

<sup>3</sup> Statement of the Hon. Eric K. Shinseki, Secretary of Veterans Affairs, before the House Committee on Veterans' Affairs and the House Committee on Armed Services, July 25, 2012, <http://armedservices.house.gov/index.cfm/2012/7/back-from-the-battlefield-dod-and-va-collaboration-to-assist-service-members-returning-to-civilian-life> (accessed February 16, 2013).

<sup>4</sup> Statement of the Hon. Leon E. Panetta, Secretary of Defense, before the House Committee on Veterans' Affairs and the House Committee on Armed Services, July 25, 2012, <http://armedservices.house.gov/index.cfm/2012/7/back-from-the-battlefield-dod-and-va-collaboration-to-assist-service-members-returning-to-civilian-life> (accessed February 16, 2013).

The rest of this report is organized into three parts. It begins with a brief discussion of electronic health records and their use in health care in general, and in the context of servicemembers and veterans. The second part of the report discusses DOD and VA health records sharing efforts including congressional efforts at encouraging health information sharing between the DOD and the VA. The report concludes with a discussion of the current status of the iEHR initiative. The purpose of this report is to provide a background on the long-standing efforts in sharing health information between DOD and VA. It does not discuss long-term implications of the most recent decision.

## **Methodology and Limitation**

To trace the evolution of DOD and VA efforts to share medical information, CRS examined and reviewed numerous taskforce and commission reports; Government Accountability Office (GAO) reports; peer reviewed journal articles; and congressional hearings that addressed health information sharing between DOD and VA. Additionally, to understand iEHR activities (prior to the February 5 announcement by Secretary Panetta and Secretary Shinseki) CRS spoke with officials of the Interagency Program Office (IPO).<sup>5</sup> A technical discussion of the iEHR and the cost of developing and deploying it are beyond the scope of this report.

A list of acronyms used throughout this report is provided in **Table A-1**.

## **Background**

Traditionally the health information of a patient seeking treatment has been recorded on paper, maintained by individual physicians, and located in multiple sites, making it a challenge to access all the vital health information at the time the patient seeks care.<sup>6</sup> According to the Institute of Medicine (IOM), the success of any health care system does not rely solely on its physical infrastructure and the health care professionals but also on how it collects, maintains, and processes patient health information.<sup>7</sup> Recent research studies and health policy debates have highlighted the potential value of electronic health records (EHR; see text box below).<sup>8</sup> Furthermore, studies have shown that the adoption of EHRs has the potential to improve quality and efficiency of patient care.<sup>9,10,11</sup>

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<sup>5</sup> Congressional Research Service (CRS) met with staff from the Interagency Program Office (IPO), on December 17, 2012.

<sup>6</sup> Stephen P. Hufnagel, "National Electronic Health Record Interoperability Chronology," *Military Medicine*, vol. 174, no. 5 (May 2009), p. 35.

<sup>7</sup> Institute of Medicine (IOM), *Returning Home from Iraq and Afghanistan: Preliminary Assessment of Readjustment Needs of Veterans, Service Members, and Their Families*, Washington, DC, 2010, p. 120.

<sup>8</sup> Laura Bonner et al., "To Take Care of Patients': Qualitative Analysis of Veterans Health Administration Personnel Experiences with a Clinical Informatics System," *Implementation Science*, vol. 5, no. 63 (2010), p. 1.

<sup>9</sup> Melinda Beeuwkes Buntin et al., "The Benefits of Health Information Technology: A Review of the Recent Literature Shows Predominantly Positive Results," *Health Affairs*, vol. 30, no. 3 (March 2011), p. 469.

<sup>10</sup> Ashish K. Jha, "The Promise of Electronic Records: Around the Corner or Down the Road?," *JAMA*, vol. 306, no. 8 (August 24, 2011), p. 880.

<sup>11</sup> Colene M. Byne et al., "The Value From Investments in Health Information Technology at The U.S. Department of Veterans Affairs," *Health Affairs*, vol. 29, no. 4 (April 2010), p. 634.

### What Is an Electronic Health Record (EHR)?

Although the definition of EHRs can vary substantially, there are generally four core components of an EHR: electronic clinical documentation (usually physician, nurse, and other clinician documentation), electronic prescribing (e.g., computerized provider order entry), results reporting and management (e.g., clinical data repository), and clinical decision support. Many EHRs also include barcoding systems and patient engagement tools. The Office of the National Coordinator for Health Information Technology (ONC) defines an EHR as “a real-time patient health record with access to evidence-based decision support tools that can be used to aid clinicians in decision-making. The EHR can automate and streamline a clinician’s workflow, ensuring that all clinical information is communicated. It can also prevent delays in response that result in gaps in care. The EHR can also support the collection of data for uses other than clinical care, such as billing, quality management, outcome reporting, and public health disease surveillance and reporting.”

**Source:** Institute of Medicine, *Health IT and Patient Safety: Building Safer Systems for Better Care*, Washington, DC, 2012, p. 38.

However, studies have shown that, to date, efforts to implement EHR systems have yielded mixed results in terms of quality and safety of health care.<sup>12</sup> Recently, an IOM report made recommendations emphasizing that health information technology (HIT) should be developed and implemented with safety as a primary focus.<sup>13</sup> According to this report, “designed and applied inappropriately, health IT can add an additional layer of complexity to the already complex delivery of health care, which can lead to unintended adverse consequences, for example dosing errors, failing to detect fatal illnesses, and delaying treatment due to poor human–computer interactions or loss of data.”<sup>14</sup>

## Electronic Health Records in the Context of Servicemembers and Veterans

Each year more than 150,000 servicemembers separate from military service and transition to veteran status. Transitioning their health care information from one large health care system (DOD) to the other (VA) involves coordination of data and information between DOD and VA.<sup>15</sup> Additionally, for those who are injured in combat operations, the treatment path stretches from the battlefield to inpatient/outpatient care in the United States to servicemembers’ transition back into military duty and/or civilian life.<sup>16</sup> Medical information is captured during each of these phases.

Because of incompatibility between the DOD and VA systems, when servicemembers separate from the military and enter VA, their DOD health records do not transfer to VA providers.<sup>17</sup> As

<sup>12</sup> Arthur L. Kellermann and Spencer S. Jones, “What It Will Take to Achieve The As-Yet-Unfulfilled Promises of Health Information Technology,” *Health Affairs*, vol. 32, no. 1 (January 2013), p. 63.

<sup>13</sup> National Academy of Sciences, Institute of Medicine, *Health IT and Patient Safety: Building Safer Systems for Better Care*, November 8, 2011, pp. S-1, <http://www.iom.edu/Reports/2011/Health-IT-and-Patient-Safety-Building-Safer-Systems-for-Better-Care> (accessed February 19, 2013).

<sup>14</sup> *Ibid.*, p. S-2.

<sup>15</sup> VA/DOD Joint Executive Council, *VA/DOD Joint Executive Council Annual Report, FY 2011 Annual Report*, Washington, DC, p. 70.

<sup>16</sup> President’s Commission on Care for America’s Returning Wounded Warriors, *Serve, Support, Simplify*, Report of the President’s Commission on Care for America’s Returning Wounded Warriors, July 2007, p. 117.

<sup>17</sup> Institute of Medicine (IOM), *Returning Home from Iraq and Afghanistan: Preliminary Assessment of Readjustment Needs of Veterans, Service Members, and Their Families*, Washington, DC, 2010, p. 122.

stated by the President's Commission on Care for America's Returning Wounded Warriors (also known as the Dole-Shalala Commission), "integration of the health information systems [is] necessary to make information available for the comprehensive care and recovery planning needed to return injured servicemembers to the fullest possible state of health."<sup>18</sup> The IOM, which was tasked with studying the readjustment needs of veterans, servicemembers, and their families by Congress,<sup>19</sup> found that "the lack of unified electronic medical records in DOD has impeded record-sharing with VA."<sup>20</sup> Additionally, once a veteran files a claim for disability benefits,<sup>21</sup> the VA has a "duty to assist" the claimant by obtaining medical records that a claimant has identified and authorized the VA to obtain.<sup>22</sup> These medical records may include information from both DOD and VA.<sup>23</sup>

## **VA and DOD Health Record Systems Interoperability**

The challenge faced in responding to veterans' health concerns in the aftermath of the Persian Gulf War of 1991 highlighted the need for compatible health information systems. Some veterans of that period were afflicted by an array of undiagnosed symptoms that collectively came to be known as the Gulf War Syndrome. The effort to track and treat these conditions was complicated by incompatible medical records of the DOD and the VA. In 1996, the President's Advisory Committee on Gulf War Veterans Illnesses recommended that:

DOD ... should assign a high priority to dealing with the problem of lost or missing medical records. A computerized central database is important. Specialized databases must be compatible with the central database. Attention should be directed toward developing a mechanism for computerizing medical data (including classified information, if and when it is needed) in the field. DOD and VA should adopt standardized record keeping to ensure continuity.<sup>24</sup>

President Clinton subsequently stated that "every soldier, sailor, airman, and marine will have a comprehensive, life-long medical record of all illnesses and injuries they suffer, the care and inoculations they receive, and their exposure to different hazards."<sup>25</sup> In addition, in 1998, the

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<sup>18</sup> Ibid.

<sup>19</sup> The National Defense Authorization Act of 2008 (P.L. 110-181) required that the Secretary of Defense, in consultation with the Secretary of Veterans Affairs, enter into an agreement with the Institute of Medicine for a study of the physical and mental health and other readjustment needs of members and former members of the armed forces who were deployed to Iraq and Afghanistan and their families as a result of such deployment.

<sup>20</sup> Institute of Medicine (IOM), *Returning Home from Iraq and Afghanistan: Preliminary Assessment of Readjustment Needs of Veterans, Service Members, and Their Families*, Washington, DC, 2010, p. 122.

<sup>21</sup> The veteran files a claim for disability compensation by submitting VA Form 21-526 to a VA's local Regional Office. For more information regarding the process for filing for benefits, see CRS Report RL34626, *Veterans' Benefits: Benefits Available for Disabled Veterans*, by Christine Scott et al.

<sup>22</sup> 38 U.S.C. § 5103A(b)-(c).

<sup>23</sup> Ibid.

<sup>24</sup> The Presidential Advisory Committee on Gulf War Veterans' Illnesses, *The Presidential Advisory Committee on Gulf War Veterans' Illnesses Final Report*, December 1996, <http://www.gulflink.osd.mil/gwvi/ch2.html#2g> (accessed February 19, 2013).

<sup>25</sup> National Science and Technology Council, *A National Obligation: Planning for Health Preparedness for and Readjustment of the Military, Veterans, and Their Families After Future Deployments*, Presidential Review Directive 5, (continued...)



Administration issued a directive that required the VA and DOD to prepare a “computer-based patient record system that will accurately and efficiently exchange information.”<sup>26</sup>

In 1999, the Congressional Commission on Service Members and Veterans Transition Assistance included a recommendation for the coordination of VA and DOD information management to improve service for veterans. It recommended the establishment of a formal information business relationship between VA and DOD. According to the commission, the relationship should broadly encompass all aspects of information exchange and result in an agreement addressing issues such as compliance with the requirements of privacy and freedom of information statutes, information security, service and development costs, data validation mechanisms, data standardization, and technology sharing. Furthermore, it stated that a VA organizational element should be created within the Defense Medical Data Center (DMDC), specifically responsible for coordinating VA and DMDC business processes.<sup>27</sup>

In 2003, the President’s Task Force to Improve Health Care Delivery for Our Nation’s Veterans made several recommendations to improve health data sharing between VA and DOD. The Task Force recommended, among other things, that VA and DOD develop and deploy by FY2005 electronic health records that are interoperable (see text box), bi-directional, and standards-based. It further went on to state:

During military service, information relevant to a service member’s deployment, occupational exposures, and health conditions should follow the service member through his or her military career. Once an individual separates from military service, the process for determining benefits, assessing health status, and receiving care through the VA health care system should be seamless, timely, and accurate. Better recording, tracking, and reporting of occupational health data will improve the research base for understanding the etiology of service-related disorders, assist in benefits determination, and improve the overall health of today’s veterans as well as those who will follow them in the future. These goals can only be accomplished through systems that are standards-based and coordinated between VA and DOD.<sup>28</sup>

### **What Is Interoperability?**

“Interoperability is the ability of an information technology (IT) system component to work with other IT system components without special effort on the part of the user. In the government, interoperability has traditionally been viewed as the Department of Defense (DOD) and Department of Veterans Affairs (VA) capability to share electronic health information of [servicemembers], veterans, and shared beneficiaries. Many [servicemembers] and other beneficiaries are also recipients of private sector health care so there is additional need to capture and share this data as well to optimize continuity of care.”

“Interoperability can be achieved at different levels. At the highest level, electronic data are computable (that is, in a

(...continued)

Executive Office of the President, Office of Science and Technology Policy, Washington, D.C., August 1998.

<sup>26</sup> U.S. General Accounting Office, *Short-Term Progress Made, but Much Work Remains to Achieve a Two-Way Data Exchange Between VA and DOD Health Systems*, GAO-04-271T, November 19, 2003, p. 1.

<sup>27</sup> Congress established the Commission on Service Members and Veterans Transition Assistance in Title VII of the Veterans’ Benefits Improvement Act of 1996 (P.L. 104-275). Congressional Commission on Servicemembers and Veterans Transition Assistance, *Final Report of the Congressional Commission on Servicemembers and Veterans Transition Assistance*, January 14, 1999, p. 172.

<sup>28</sup> President’s Task Force To Improve Health Care Delivery For Our Nation’s Veterans, *Final Report of the President’s Task Force To Improve Health Care Delivery For Our Nation’s Veterans*, May 2003, p. 38.

format that a computer can understand and act on to, for example, provide alerts to clinicians on drug allergies). At a lower level, electronic data are structured and viewable, but not computable. The value of data at this level is that they are structured so that data of interest to users are easier to find. At still a lower level, electronic data are unstructured and viewable, but not computable. With unstructured electronic data, a user would have to search through uncategorized data to find needed or relevant information. Beyond these, paper records also can be considered interoperable (at the lowest level) because they allow data to be shared, read, and interpreted by human beings.”

**Sources:** Stephen P. Hufnagel, "Interoperability," *Military Medicine*, vol. 174, no. 5 (May 2009), p. 43; and U.S. Government Accountability Office, *Electronic Health Records: DOD and VA Interoperability Efforts Are Ongoing; Program Office Needs to Implement Recommended Improvements*, GAO-10-332, January 2010, p. 4.

## DOD-VA Electronic Health Records Sharing Efforts: 1998-2008

Since 1998, pursuant to President Clinton’s directive, DOD and VA have been pursuing various strategies to share patient health information for active duty military personnel and veterans (see **Table 1** and **Figure D-1**). However, both DOD and VA efforts to meet this goal have faced repeated changes in goals, initiatives, and deadlines.

As discussed above, in 1998 the Clinton Administration issued a directive that required the VA and DOD to prepare “a computer-based patient record system that will accurately and efficiently exchange information” between the two departments.<sup>29</sup> Following this directive, VA and DOD began a joint program toward achieving the capability to share patient health information for active duty military personnel and veterans. The first initiative, the Government Computer-Based Patient Record (GCPR) project, was envisioned as 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 agencies’ 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.<sup>30</sup>

By July 2002, VA and DOD had revised their plans towards electronically sharing patient health data focusing on one-way transfer of patient health data from DOD to VA. The two departments renamed the GCPR project the Federal Health Information Exchange (FHIE) program. The FHIE initiative was completed in 2004, and enables DOD to electronically transfer servicemembers’ health information to VA when the servicemember leaves active duty (see **Table 1**).<sup>31</sup>

For patients being treated by both DOD and VA, the departments continue to maintain the jointly developed Bidirectional Health Information Exchange (BHIE) system, which was implemented in 2004. Using BHIE, DOD and VA clinicians are able to access each other’s health data in real-time (see **Table 1**). In FY2011, VA upgraded BHIE to enable providers to view inpatient notes, and DOD neuropsychological assessments and imagery from the DOD of seriously ill and wounded servicemembers.

<sup>29</sup> National Science and Technology Council, *A National Obligation: Planning for Health Preparedness for and Readjustment of the Military, Veterans, and Their Families After Future Deployments*, Presidential Review Directive 5, Executive Office of the President, Office of Science and Technology Policy, Washington, D.C., August 1998, <http://www.research.va.gov/resources/pubs/pgulf98/appendixb.pdf> (accessed February 20, 2013).

<sup>30</sup> U.S. General Accounting Office, *Government Computer-Based Patient Records: Better Planning and Oversight by VA, DOD, and IHS Would Enhance Health Data Sharing*, GAO-01-459, April 2001.

<sup>31</sup> Stephen P. Hufnagel, “National Electronic Health Record Interoperability Chronology,” *Military Medicine*, vol. 174, no. 5 (May 2009), p. 39.

Additionally, in March 2004, both DOD and VA began developing the Clinical Data Repository/Health Data Repository (CHDR). This enabled the exchange of computable, standardized data between DOD and VA. This interoperability provides clinical users at DOD and VA medical facilities with bi-directional, real-time exchange of data that includes, at a minimum, the exchange of outpatient pharmacy and drug allergies (see **Table 1**).<sup>32</sup>

The two departments, beginning in 2004, also established the Laboratory Data Sharing Interoperability (LDSI) initiative. LDSI allows DOD and VA to electronically communicate orders for lab tests and their results at select locations. It should be noted that LDSI is not a typical data sharing technology; rather it is a tool supporting lab orders.

**Table 1. DOD-VA Clinical Data Sharing Initiatives**

Name of Program	Data Sharing Direction	Population Served	Viewable Data
Federal Health Information Exchange (FHIE)	One-way (DOD to VA)	Data of servicemembers separated from active duty	<ul style="list-style-type: none"> <li>Data include patient demographics; laboratory results; radiology results; outpatient pharmacy; allergies; and hospital admission.</li> <li>Data are not real-time; monthly transfer of health data</li> </ul>
Bidirectional Health Information Exchange (BHIE)	Two-way (DOD to VA and VA to DOD)	Patients who receive care in both DOD and VA facilities (shared patients)	<ul style="list-style-type: none"> <li>Data include allergies, outpatient pharmacy, inpatient and outpatient laboratory and radiology reports, demographic data, diagnoses, vital signs, problem lists, family history, social history, other history, questionnaires, and theater clinical data</li> <li>Data are real-time</li> </ul>
Clinical Data Repository/Health Data Repository (CHDR)	Two-way (DOD to VA and VA to DOD)	Patients who receive care in both DOD and VA facilities (shared patients)	<ul style="list-style-type: none"> <li>Data include pharmacy and drug allergy</li> <li>Data sent from one department's repository become part of the patient's permanent medical record in the other department's repository</li> <li>Data are real-time</li> </ul>

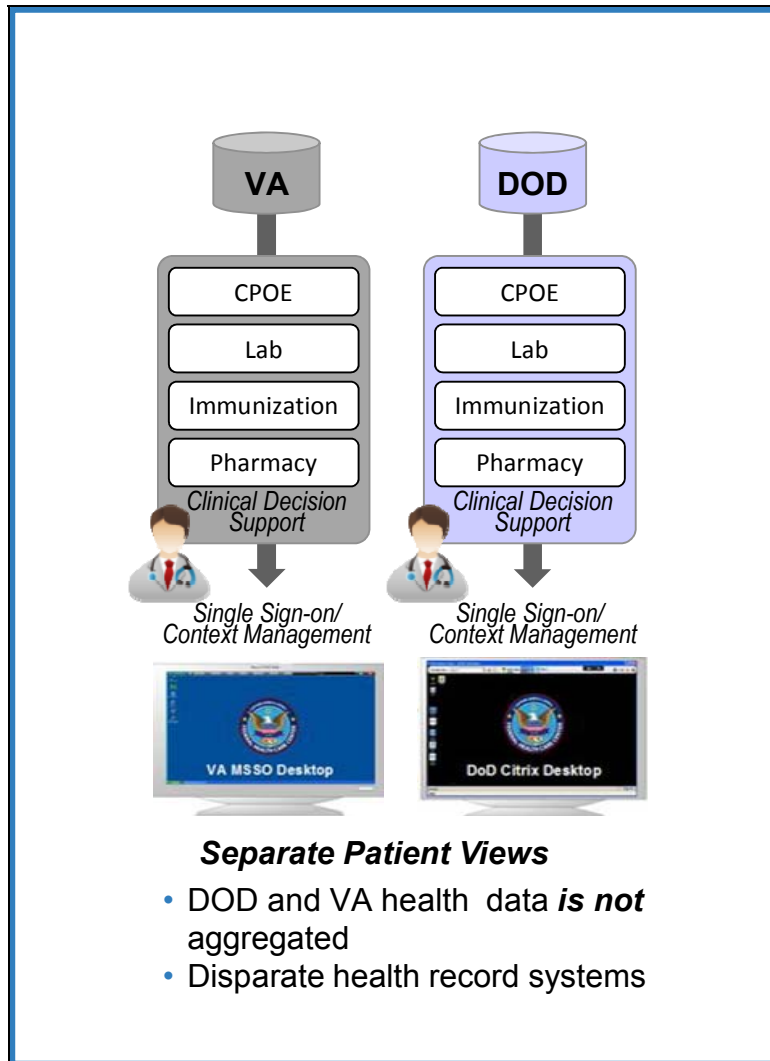
**Source:** Table prepared by CRS based on information from the Defense Health Information Management System, <http://dhims.health.mil/products/data-sharing/index.aspx> (accessed Friday, February 22, 2013).

As discussed above, DOD and VA have established and implemented various mechanisms for the electronic sharing of health information at various levels. However, both departments have numerous and disparate data systems, as well as numerous data storage systems. While health data are shared at various levels, *DOD and VA health data are not aggregated* (see **Figure 1**). The

<sup>32</sup> Ibid, p.40.

DOD and VA systems are best described as two disparate health record systems that do exchange data.

**Figure I. Current State of DOD-VA EHR Systems**



**Source:** Interagency Program Office (IPO)

**Notes:** COPE= Computerized physician/provider order entry

The implications of having two separate EHR systems are illustrated in the experience of the Lovell Federal Health Care Center (FHCC), at which DOD and VA are attempting to jointly operate a hospital for both active duty servicemembers and veterans. A recent report by IOM describes the limitations imposed by the existence of separate EHRs:

Using two EHR systems for the same patient population raised the specter of patient injury because of negative drug interactions or allergic reactions occurring when the provider and pharmacist using one EHR system is unaware of prescriptions or allergies entered into the other EHR system. For this reason the CTG [clinical task group] had prefaced its pharmacy options with a caveat that everything depended on orders portability for pharmacy because of its critical role in ensuring patient safety. Orders portability for pharmacy—the ability to

enter a prescription into either the DOD EHR system or the VA EHR system and have it appear in the other system simultaneously so that potential drug interactions and allergies could be recognized was one of the basic IM/IT [information management/information technology] requirements that was supposed to be operational by October 1, 2010. As it became clear this would not be achieved and would pose an unacceptable threat to patient safety, an interim workaround solution had to be developed.<sup>33</sup>

## **Congressional Mandates**

Congressional committees with oversight over veterans matters have devoted attention to health information sharing between the DOD and VA, particularly the need to share health information to support the transition from active duty to veteran status. Over the past several years the committees have held numerous oversight hearings to identify the challenges facing both departments in achieving greater health information sharing (see **Appendix B**).<sup>34</sup>

In 2008, DOD and VA were charged by law to jointly develop and implement electronic health record systems or capabilities to allow for full interoperability of personal health care information and to accelerate the exchange of health care information in order to support the delivery of health care by both departments.<sup>35</sup> To this end, the law also established an interagency program office (IPO) to act as a single point of accountability in the rapid development and implementation of the electronic health record systems or capabilities, mandating full interoperability of personal health care information and accelerating the exchange of health care information between the departments.<sup>36</sup> The law specified that the IPO would be led by a Director appointed by the Secretary of Defense with the concurrence of the Secretary of Veterans Affairs. The IPO's Deputy Director would be appointed by the Secretary of Veterans Affairs with the concurrence of the Secretary of Defense. In addition to the direction, supervision, and control of the IPO provided by the Secretary of Defense and the Secretary of Veterans Affairs, the law specified that the IPO would receive guidance from the Department of Veterans Affairs-Department of Defense Joint Executive.<sup>37</sup>

The law further specified that the function of the office would be to implement, by not later than September 30, 2009, electronic health record systems or capabilities that allow for full interoperability of personal health care information between DOD and VA. These health records would also comply with applicable interoperability standards, implementation specifications, and certification criteria (including for the reporting of quality measures) of the federal government.<sup>38</sup>

A later law specified that the Director of the IPO is required, in consultation with industry and appropriate federal agencies, to develop, or adopt from industry, information technology

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<sup>33</sup> Institute of Medicine (IOM), *Evaluation of the Lovell Federal Health Care Center Merger: Findings, Conclusions, and Recommendations*, Washington, DC, 2012, p.76-77.

<sup>34</sup> Ronald W. Gimbel and Conrad A. Clyburn, "Toward a DOD/VA Longitudinal Health Record: Politics and the Policy Landscape," *Military Medicine*, vol. 174, no. 5 (May 2009), pp. 4-5.

<sup>35</sup> Subsection 1635(a) of the National Defense Authorization Act for Fiscal Year 2008 (P.L. 110-181) enacted January 28, 2008.

<sup>36</sup> Subsection 1635(b) of P.L. 110-181.

<sup>37</sup> Subsection 1635(c) of P.L. 110-181.

<sup>38</sup> Subsection 1635(d) of P.L. 110-181.

infrastructure guidelines and standards to enable the departments to effectively select and utilize information technologies to meet the interoperability requirements.<sup>39</sup>

## **GAO Reports**

GAO has issued a series of reports on the departments' efforts to develop fully interoperable electronic health record systems or capabilities as required by the FY2008 National Defense Authorization Act (P.L. 110-181). Findings from GAO studies of this issue may be broadly summarized as follows: (1) VA and DOD face significant challenges in achieving long-term data sharing capability; (2) while the two departments have developed a strategy at the higher levels, both departments lack objective, quantifiable, and measurable goals to assess their success in achieving full electronic health record interoperability;<sup>40</sup> and (3) VA and DOD lack mechanisms for identifying and implementing efficient and effective information technology solutions to jointly address both departments' common health care system needs as a result of barriers in three key IT management areas—strategic planning, enterprise architecture, and investment management. With respect to these three areas, GAO has drawn the following conclusions:<sup>41</sup>

- **Strategic planning:** The two departments have been unable to articulate explicit plans, goals, and time frames for jointly addressing the health IT requirements common to both departments' electronic health record systems.
- **Enterprise architecture:** Although VA and DOD have taken steps toward developing and maintaining artifacts related to a joint health architecture (i.e., a description of business processes and supporting technologies), the architecture is not sufficiently mature to guide the departments' joint health IT modernization efforts. For example, the departments have not defined how they intended to transition from their current architecture to a planned future state.
- **Investment management:** VA and DOD have not established a joint process for selecting IT investments based on criteria that consider cost, benefit, schedule, and risk elements, which would help to ensure that a chosen solution both meets the departments' common health IT needs and provides better value and benefits to the government as a whole.

**Appendix C** provides summaries of GAO studies and testimony on DOD and VA electronic health information sharing, from 2001 to its most recent report in November 2012.

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<sup>39</sup> Subsection 252 of P.L. 110-417.

<sup>40</sup> U.S. Government Accountability Office, *Electronic Health Records: DOD's and VA's Sharing of Information Could Benefit from Improved Management*, GAO-09-268, February 2009.

<sup>41</sup> U.S. Government Accountability Office, *Electronic Health Records: DOD and VA Should Remove Barriers and Improve Efforts to Meet Their Common System Needs*, GAO-11-265, February 2011.

## Current Status

### Interagency Program Office (IPO)

The IPO was officially formed by the DOD and the VA on April 17, 2008, and staffed by temporary personnel provided by both departments. On December 30, 2008, a Delegation of Authority Memorandum was signed by the Deputy Secretary of Defense, assigning the IPO to the Under Secretary of Defense for Personnel and Readiness [USD(P&R)]. The memorandum directed USD(P&R) to appoint a permanent IPO Director with concurrence of the VA Secretary. This memorandum allowed the DOD to begin the process of recruiting and hiring IPO leadership and staff.

In January 2009, the IPO completed its charter articulating, among other things, its mission and functions with respect to attaining interoperable electronic health data. The charter was signed by the Deputy Secretaries on September 24, 2009.<sup>42</sup> The charter further identified the office's responsibilities in carrying out its mission, in areas such as oversight and management, stakeholder communication, and decision-making. On October 27, 2011, the two departments signed a revised IPO Charter that stated that the IPO serves as the single point of accountability for the departments in the development and implementation of the integrated Electronic Health Record (iEHR).<sup>43,44</sup>

### Initial Interoperability Goals

The Interagency Clinical Informatics Board (ICIB), made up of senior clinical leaders from both DOD and VA, issued an Information Interoperability Plan (IIP) in September 2008.<sup>45</sup> This document defined "interoperability" as "the ability of users to equally interpret (understand) unstructured or structured information which is shared (exchanged) between them in electronic form." Based on this definition, DOD and VA adopted six interoperability initiatives to be completed by September 2009 in order to satisfy the interoperability requirements:

1. Expand Essentris<sup>46</sup> implementation in DOD.
2. Demonstrate the operation of the Partnership Gateways<sup>47</sup> in support of joint DOD/VA health information sharing.
3. Enhance sharing of the social history data captured by DOD with VA.

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<sup>42</sup> Joint Executive Council, Annual Report 2009, page 3 available at <http://prhome.defense.gov/docs/2009%20VA%20DoD%20Joint%20Executive%20Council%20Annual%20Report%20and%20Joint%20Strategic%20Plan.pdf> ((accessed February 20, 2013).

<sup>43</sup> U.S. Government Accountability Office, *VA and DOD Health Care: Department-Level Actions Needed to Assess Collaboration Performance, Address Barriers, and Identify Opportunities*, GAO-12-992, September 2012, p. 16.

<sup>44</sup> The current charter is available at <http://www.tricare.mil/tma/ipo/documents/IPO.pdf> (accessed February 20, 2013).

<sup>45</sup> DOD/VA Information Interoperability Plan, September 2008, page 71. <http://tricare.mil/tma/congressionalinformation/downloads/IIPSept15.pdf>

<sup>46</sup> Essentris® is a commercial off-the-shelf inpatient records system from CliniComp, Intl. and procured by DOD in 2009.

<sup>47</sup> Based on the results of a network capability analysis measuring inbound and outbound bandwidth, DOD/VA secure Internet gateways to support expanded bandwidth requirements.

4. Demonstrate an initial capability for DOD to scan medical documents into the DOD EHR and forward those documents electronically to VA.
5. Provide all servicemembers' health assessment data stored in the DOD EHR to the VA in such a fashion that questions are associated with the responses.
6. Provide initial capability to share electronic access to separation physical exam information captured in the DOD EHR with the VA.

As a result of meeting these six objectives, DOD and VA reported to Congress that they had satisfied the September 30, 2009, requirement for "full" interoperability.<sup>48</sup>

## **DOD-VA iEHR**

Although the two departments reported to Congress that the statutory interoperability goal was met, they nevertheless continued to work on integrating the DOD and VA EHR systems on their own initiative. The Secretaries of VA and Defense committed their respective departments to jointly develop and implement the next generation of EHR capabilities with integrated objectives towards implementing a common integrated EHR (iEHR). On March 17, 2011, the Secretary of Veterans Affairs and the Secretary of Defense reached an agreement to work cooperatively on the development of a common electronic health record and to sunset corresponding legacy systems and transition to a new iEHR by 2017. An agreement was signed in July 2011 to move forward on this initiative.<sup>49</sup> The Secretaries of DOD and VA validated the goals and objectives of the iEHR, and established that the iEHR would:

- Promote transparency;
- Enable the commitments for common business processes (such as billing);
- Capitalize on opportunities for influencing a mutual course for both departments' EHR modernization;
- Maximize interoperability;
- Manage efficiency of cost and scale;
- Accelerate the delivery of health services;
- Improve the quality of delivered services through reliability, maintainability, completeness, and accuracy of data captured;
- Improve interoperability and data sharing of medical history between departments;
- Support electronic medical data capture and exchange between the private U.S. health care system and the federal, state, and local government;

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<sup>48</sup> DOD/VA Interagency Program Office Report to Congress 2009, page 29, <http://www.tricare.mil/tma/congressionalinformation/downloads/2010310/Annual%20RTC%20-%20Fully%20Interoperable%20Electronic%20Personal%20Health%20Information%20for%20DoD%20and%20VA.pdf> (accessed February 20, 2013).

<sup>49</sup> Department of Defense, Background on DOD and VA Chicago Announcement on Virtual Lifetime Electronic Record (VLER) and Integrated Electronic Health Record (iEHR), Fact Sheet, 2012, <http://www.defense.gov/news/EHRDoDVAFactSheet.pdf> (accessed February 20, 2013).



- Provide a quality, satisfactory patient experience; and
- Reduce overall cost of health IT investments.<sup>50</sup>

Under this iEHR initiative, the IPO would have developed EHR capabilities in six increments over a period of five years beginning in 2012.<sup>51</sup>

## **February 2013 Announcement**

On February 5, 2013, Secretaries Shinseki and Panetta announced that the two departments plan to improve data interoperability before the end of 2013, by standardizing health care data, accelerating the exchange of real-time data between VA and DOD, allowing VA and DOD patients to download their medical records, and establishing a single EHR display system for DOD and VA providers. Secretary Panetta stated that “Rather than building a single integrated system from scratch, we will focus our immediate efforts on integrating VA and DOD health data as quickly as possible, by focusing on interoperability and using existing solutions.”<sup>52</sup> On February 8, 2013, DOD issued a request for information to replace its existing EHR systems<sup>53</sup> with a single EHR system for all DOD beneficiaries.<sup>54</sup>

## **Concluding Observations**

Both the DOD and the VA have undertaken a number of initiatives designed to encourage the two departments to share their health care information electronically in order to serve the medical needs of servicemembers and veterans. On the other hand, moderate progress has been made to design and plan EHR systems around a need to insure compatibility with each other’s systems. Nevertheless, it is unclear at this time what the long-term implications of the most recent change in the program strategy will be for creating an EHR that would share medical information not only between DOD and VA, but also with entities outside the two departments such as private medical providers.

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<sup>50</sup> Department of Defense TRICARE Management Activity, *DOD/VA Interagency Program Office Technical Specifications Request for Information (RFI) Questions to Industry*, Solicitation Number: TMA-iEHR-IPO-RFI-07-2012, July 18, 2012, p. 2.

<sup>51</sup> In very technical terms, the iEHR program would have used a service oriented architecture (SOA) construct to acquire the services and infrastructure necessary to provide defined capabilities and ensure successful management, oversight, operations and maintenance of services, applications, infrastructure and their associated technologies. The infrastructure would have included an Enterprise Service Bus (ESB) with an integrated federated data repository that could have performed reach back to legacy repositories. SOA services to be developed would have included common services and adapters that access open or proprietary Application Program Interfaces (APIs) for clinical ancillary automated information system (AISs), allowing for a true plug and play infrastructure.

<sup>52</sup> U.S. Department of Defense Office of the Assistant Secretary of Defense (Public Affairs) News Transcript, Remarks by Secretary Panetta and Secretary Shinseki from the Department of Veterans Affairs February 5, 2013, <http://www.defense.gov/transcripts/transcript.aspx?transcriptid=5187>(accessed February 20, 2013).

<sup>53</sup> DOD’s current EHR systems include the Armed Forces Health Longitudinal Technology Application (AHLTA), Composite Health Care System (CHCS), and Inpatient System Essentris®.

<sup>54</sup> Department of Defense TRICARE Management Activity, *Medical Electronic DOD Integrated Core System (MEDICS), Request for Information (RFI), Solicitation Number: HT0012-RFI-0008*, February 8, 2013.

## Appendix A. Acronyms

**Table A-1. List of Acronyms**

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BHIE	Bidirectional Health Information Exchange
CHDR	Clinical Data Repository/Health Data Repository
CPOE	Computerized Physician/Provider Order Entry
DMDC	Defense Medical Data Center
DOD	Department of Defense
EHR	Electronic Health Record
FHCC	Federal Health Care Center
FHIE	Federal Health Information Exchange
GAO	Government Accountability Office
GCPR	Government Computer-Based Patient Record
HIT	Health Information Technology
ICIB	Interagency Clinical Informatics Board
iEHR	Integrated Electronic Health Record
IIP	Information Interoperability Plan
IOM	Institute of Medicine
IPO	Interagency Program Office
IT	Information Technology
LDSI	Laboratory Data Sharing Interoperability (LDSI) initiative
VA	Department of Veterans Affairs

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**Source:** Table prepared by CRS.

## Appendix B. Selected Congressional Hearings, 2000-2011

- U.S. Congress, House Committee on Veterans' Affairs, Subcommittee on Health, *VA/DOD Health Care Sharing*, 106<sup>th</sup> Cong., 2<sup>nd</sup> sess., May 17, 2000 (Washington: GPO, 2000).
- U.S. Congress, House Committee on Veterans' Affairs, *Handoff or Fumble? Are DOD and VA Providing Seamless Health Care Coverage To Transitioning Veterans?*, 108<sup>th</sup> Cong., 1<sup>st</sup> sess., October 16, 2003 (Washington: GPO, 2004).
- U.S. Congress, House Committee on Veterans' Affairs, Subcommittee on Oversight and Investigations, *VA-DOD Shared Medical Records—20 Years and Waiting*, 108<sup>th</sup> Cong., 1<sup>st</sup> sess., November 19, 2003 (Washington: GPO, 2005).
- U.S. Congress, House Committee on Veterans' Affairs, Subcommittee on Oversight and Investigations, *Department Of Veterans Affairs Role In The Future of Electronic Health Records*, 108<sup>th</sup> Cong., 2<sup>nd</sup> sess., May 19, 2004 (Washington: GPO, 2005).
- U.S. Congress, Senate Committee on Veterans' Affairs, *DOD/VA Collaboration And Cooperation to Meet the Needs of Returning Servicemembers*, 110<sup>th</sup> Cong., 1<sup>st</sup> sess., January 23, 2007 (Washington: GPO, 2007).
- U.S. Congress, Senate Committee on Veterans' Affairs, *DOD/VA Collaboration And Cooperation To Meet The Health Care Needs Of Returning Servicemembers*, 110<sup>th</sup> Cong., 1<sup>st</sup> sess., March 27, 2007 (Washington: GPO, 2007).
- U.S. Congress, House Committee on Veterans' Affairs, Subcommittee on Oversight and Investigations, *Sharing of Electronic Medical Records Between the U.S. Department of Defense and the U.S. Department of Veterans Affairs*, 110<sup>th</sup> Cong., 1<sup>st</sup> sess., May 8, 2007 (Washington: GPO, 2008).
- U.S. Congress, Senate Committee on Veterans' Affairs, *Oversight Hearing: Update on VA and DOD Cooperation and Collaboration*, 110<sup>th</sup> Cong., 2<sup>nd</sup> sess., April 23, 2008 (Washington: GPO, 2009).
- U.S. Congress, Senate Committee on Veterans' Affairs, *Hearing on Sharing of VA/DOD Electronic Health Information*, 110<sup>th</sup> Cong., 2<sup>nd</sup> sess., September 24, 2008 (Washington: GPO, 2009).
- U.S. Congress, House Committee on Veterans' Affairs, Subcommittee on Oversight and Investigations, *Examining the Progress of Electronic Health Record Interoperability Between the U.S. Department Of Veterans Affairs and U.S. Department Of Defense*, 111<sup>th</sup> Cong., 1<sup>st</sup> sess., July 14, 2009 (Washington: GPO, 2010).
- U.S. Congress, Senate Committee on Veterans' Affairs, *Review of the VA and DOD Integrated Disability Evaluation System*, 111<sup>th</sup> Cong., 2<sup>nd</sup> sess., November 18, 2010 (Washington: GPO, 2011).

- U.S. Congress, Senate Committee on Veterans' Affairs, *Seamless Transition: Improving VA/DOD Collaboration*, 112<sup>th</sup> Cong., 1<sup>st</sup> sess., May 18, 2011 (Washington: GPO, 2011).

## Appendix C. GAO Reports/Testimony on VA and DOD Sharing of Patient Health Information

**Table C-1. GAO Reports/Testimony on VA and DOD Sharing of Patient Health Information**

Date/Report or Testimony	Summary of Findings <sup>a</sup>
September 2012, GAO-12-992	<p>Among other things, VA and DOD face a number of significant barriers that hinder their collaboration efforts. At collaboration sites, the departments' IT barriers hinder ongoing efforts in many ways. For example, the North Chicago Federal Health Care Center joint venture hired five full-time pharmacists specifically to conduct manual checks of patient records to reconcile allergy information and identify possible interactions between drugs prescribed by providers in both VA and DOD systems. Similarly, Biloxi joint venture officials reported having to rely on inefficient and time-consuming approaches to share information, including manually copying or transferring medical information such as diagnostic images between VA's and DOD's IT systems, or faxing information to their collaboration partner, where it must be entered into the partner's IT system.</p>
February 2, 2011, GAO-11-265	<p>DOD and VA have not articulated explicit plans, goals, and time frames for jointly addressing the health IT requirements common to both departments' electronic health record systems, and the departments' joint strategic plan does not discuss how or when DOD and VA propose to identify and develop joint solutions to address their common health IT needs. In addition, although DOD and VA have taken steps toward developing and maintaining artifacts related to a joint health architecture (i.e., a description of business processes and supporting technologies), the architecture is not sufficiently mature to guide the departments' joint health IT modernization efforts. For example, the departments have not defined how they intend to transition from their current architecture to a planned future state. Furthermore, DOD and VA have not established a joint process for selecting IT investments based on criteria that consider cost, benefit, schedule, and risk elements, which limits their ability to pursue joint health IT solutions that both meet their needs and provide better value and benefits to the government as a whole.</p>
January 28, 2010, GAO-10-332	<p>DOD and VA previously established six objectives that they identified as necessary for achieving full interoperability; they have now met the remaining three interoperability objectives that GAO previously reported as being partially achieved—expand questionnaires and self-assessment tools, expand DOD's inpatient medical records system, and demonstrate initial document scanning. As a result of meeting the six objectives, the departments' officials, including the co-chairs of the group responsible for representing the clinician user community, believe they have satisfied the September 30, 2009, requirement for full interoperability. Nevertheless, DOD and VA are planning additional actions to further increase their interoperable capabilities and address clinicians' evolving needs for interoperable electronic health records.</p> <p>The interagency program office is not yet positioned to function as a single point of accountability for the implementation of interoperable electronic health record systems or capabilities. The departments have made progress in setting up their interagency program office by hiring additional staff, including a permanent director.</p>

Date/Report or Testimony	Summary of Findings <sup>a</sup>
July 28, 2009, GAO-09-775	DOD and VA have continued to increase electronic health information interoperability. In particular, the departments have taken steps to meet their six interoperability objectives by September 30, 2009. However, for two of the six interoperability objectives, the departments subsequently plan to perform significant additional activities that are necessary to meet clinicians' needs. Further, the departments' lack of progress in establishing fundamental IT management capabilities that are specific responsibilities of the interagency program office contributes to uncertainty about the extent to which the departments will progress toward achievement of full interoperability by the deadline. While the departments have generally made progress toward making the program office operational, the office has not yet completed a project plan or a detailed integrated master schedule. Without these important tools, the office is limited in its ability to effectively manage and provide meaningful progress reporting on the delivery of interoperable capabilities that are intended to improve the quality of health care provided to our nation's veterans.
July 14, 2009, GAO-09-895T	VA and DOD have continued to increase electronic health information interoperability, and have taken steps to meet the six objectives that they identified as necessary to achieve full interoperability by September 30, 2009. However, for two of the six interoperability objectives, the departments subsequently plan to perform significant additional activities that are necessary to meet clinicians' needs. Further, the departments' lack of progress in establishing fundamental IT management capabilities that are the specific responsibilities of the interagency program office contributes to uncertainty about the extent to which they will achieve full interoperability by the deadline.
March 12, 2009, GAO-09-427T	Through their long-running electronic health information sharing initiatives, VA and DOD have succeeded in increasing their ability to share and use health information. In particular, they are sharing certain clinical information (pharmacy and drug allergy data) in computable form—that is, in a format that a computer can understand and act on. This permits health information systems to provide alerts to clinicians on drug allergies, an important feature that was given priority by the departments' clinicians. The departments are now exchanging this type of data on over 27,000 shared patients—an increase of about 9,000 patients between June 2008 and January 2009. Sharing computable data is considered the highest level of interoperability, but other levels also have value. That is, data that are only viewable still provide important information to clinicians, and much of the departments' shared information is of this type. However, the departments have more to do: not all electronic health information is yet shared, and although VA's health data are all captured electronically, information is still captured on paper at many DOD medical facilities. Finally, the departments' efforts face management challenges. Specifically, the effectiveness of the departments' planning for meeting the deadline for fully interoperable electronic health records is reduced because their plans did not consistently identify results-oriented performance goals (i.e., goals that are objective, quantifiable, and measurable) or measures that would permit progress toward the goals to be assessed.

Date/Report or Testimony	Summary of Findings <sup>a</sup>
January 28, 2009, GAO-09-268	In the more than 10 years since DOD and VA began collaborating to electronically share health information, the two departments have increased interoperability. Nevertheless, while the departments continue to make progress, the manner in which they report progress—by reporting increases in interoperability over time—has limitations. These limitations are rooted in the departments’ plans, which identify interoperable capabilities to be implemented, but lack the results-oriented (i.e., objective, quantifiable, and measurable) goals and associated performance measures that are a necessary basis for effective management. Without establishing results-oriented goals, then reporting progress using measures relative to the established goals, the departments and their stakeholders do not have the comprehensive picture that they need to effectively manage their progress toward achieving increased interoperability. Further constraining the departments’ management effectiveness is their slow pace in addressing GAO’s July 2008 recommendation related to setting up the interagency program office that Congress called for to function as a single point of accountability in the development and implementation of electronic health record capabilities.
September 24, 2008, GAO-08-1158T	DOD and VA are sharing some, but not all, electronic health information. This includes exchanging some information in computable form, which is the highest level of interoperability. In other cases, data can be viewed only—a lower level of interoperability that still provides clinicians with important information. The departments have undertaken a number of initiatives, resulting in varied sharing capabilities. However, information is still being captured in paper records at many DOD medical facilities, and not all electronic health information is being shared.
July 28, 2008, GAO-08-954	DOD and VA are currently sharing more health information than ever before, including exchanging some at the highest level of interoperability, that is, in computable form. The departments also have efforts under way to share additional information. Additional issues remaining to be addressed include electronic sharing of the information in paper-based health records and the completion of their long-range plans to develop fully interoperable health information systems. According to the departments, the DOD/VA Information Interoperability Plan is to address these and other issues. Once the plan is finalized and approved by DOD and VA officials, GAO intends to perform an assessment of the plan. However, if the plan includes the essential elements needed to guide the departments in achieving their long-term goal of seamless sharing of health information, it could improve the prospects for the successful achievement of this goal.  Further enhancing interoperability depends on adherence to common standards. The two departments have agreed on standards and are working with each other and federal groups to help ensure that their systems are both interoperable and compliant with current and emerging federal standards.

Date/Report or Testimony	Summary of Findings <sup>a</sup>
October 24, 2007, GAO-08-207T	Under their long-term initiative, the modern health information systems being developed by each department are to share standardized computable data through an interface between data repositories associated with each system. The repositories have now been developed, and the departments have begun to populate them with limited types of health information. In addition, the interface between the repositories has been implemented at seven VA and DOD sites, allowing computable outpatient pharmacy and drug allergy data to be exchanged. Nevertheless, the departments must still agree to standards for the remaining categories of medical information, populate the data repositories with this information, complete the development of the two modernized health information systems, and transition from their existing systems. Further, the departments have established ad hoc processes to meet the immediate need to provide data on severely wounded servicemembers to VA's polytrauma centers, which specialize in treating such patients. While these multiple initiatives and ad hoc processes have facilitated degrees of data sharing, they nonetheless highlight the need for continued efforts to integrate information systems and automate information exchange. At present, it is not clear how all the initiatives are to be incorporated into an overall strategy focused on achieving the departments' goal of comprehensive, seamless exchange of health information.
September 19, 2007, GAO-07-1246T	VA achieved a milestone in the long-term effort to share electronic health information with DOD, having begun to exchange limited medical data with DOD (at selected sites) through an interface between the data repositories for the modern health information systems that each department is developing. Nevertheless, to achieve their long-term vision, VA and DOD have much work still to do (such as extending the current capability throughout both departments), and the two departments have not yet projected a final completion date for the whole initiative.
July 18, 2007, GAO-07-1108T	VA and DOD have made progress in both their long-term and short-term initiatives to share health information, but much work remains to achieve the goal of a shared electronic medical record and seamless transition between the two departments. In the long-term project to develop modernized health information systems, the departments have begun to implement the first release of the interface between their modernized data repositories, and computable outpatient pharmacy and drug allergy data are being exchanged at seven VA and DOD sites. However, significant work remains, including agreeing to standards for the remaining categories of medical information and populating the data repositories with all this information. The two departments have also made progress in their short-term projects to share information in existing systems. Through all these efforts, VA and DOD are achieving exchanges of health information. However, these exchanges are as yet limited, and it is not clear how they are to be integrated into an overall strategy toward achieving the departments' long-term goal of comprehensive, seamless exchange of health information. Consequently, it remains essential for the departments to develop a comprehensive project plan to guide their efforts to completion, in line with GAO's earlier recommendations.



<b>Date/Report or Testimony</b>	<b>Summary of Findings<sup>a</sup></b>
May 8, 2007, GAO-07-852T	In the long-term project to develop modernized health information systems, the departments have begun to implement the first release of the interface between their modernized data repositories, and computable outpatient pharmacy and drug allergy data are being exchanged at seven VA and DOD sites. Although the data being exchanged are limited, implementing this interface is a milestone toward the long-term goal of modernized systems with interoperable electronic medical records. Besides completing the Federal Health Information Exchange (FHIE), the departments have made progress on two demonstration projects. In addition to their technology efforts, the two departments have undertaken ad hoc activities to accelerate the transmission of health information on severely wounded patients from DOD to VA's four polytrauma centers, which care for veterans and servicemembers with disabling injuries to more than one physical region or organ system.
April 30, 2007, GAO-07-554R	In March 2004, DOD and VA began collaborating on a long-term initiative to make their outpatient pharmacy data computable. To help ensure that all shared patients benefit from the exchange of computable outpatient pharmacy data, the Secretary of Defense and the Secretary of Veterans Affairs should expedite certain ongoing efforts. Specifically, GAO recommend that: (1) the Secretary of Defense and the Secretary of Veterans Affairs expedite efforts to develop a solution for activating shared patients when patients' identifying information does not match exactly, (2) the Secretary of Defense expedite efforts to assign a unique DOD identification number to VA patients who were discharged from active duty before 1997, (3) the Secretary of Veterans Affairs expedite efforts to expand to all VA sites the capability to automatically check DOD data that are exchanged through CHDR, and (4) the Secretary of Defense and the Secretary of Veterans Affairs expedite the development of written guidelines for all sites to use for defining and identifying shared patients.
June 22, 2006, GAO-06-905T	VA and DOD are implementing limited, near-term demonstration projects, and they are making progress toward their long-term effort to share electronic patient health data. The Bidirectional Health Information Exchange, implemented at 16 sites, allows the two-way exchange of health information on shared patients in text format. The Laboratory Data Sharing Interface application, implemented at 6 sites, is used to facilitate the electronic transfer/sharing of orders for laboratory work and the results of the work. In their longer-term efforts to achieve a virtual medical record, VA and DOD have more to do to achieve the two-way electronic data exchange capability originally envisioned. They have made progress in, for example, preparing data for exchange, and they have implemented three of GAO's four earlier recommendations. However, they 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 GAO recommended. Moreover, the departments have experienced delays in their efforts to begin exchanging computable patient health data.

Date/Report or Testimony	Summary of Findings <sup>a</sup>
September 28, 2005, GAO-05-1051T	<p>VA and DOD had 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, 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 work. Since GAO's 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 GAO made in June 2004, but 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 GAO previously recommended. Moreover, the departments have 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.</p> <p>VA and DOD are proceeding with actions intended to support the sharing of health data, but continue to be far from achieving the two way electronic data exchange capability envisioned in the HealthePeople (Federal) strategy. The departments are continuing to take actions to develop their individual health information systems that are critical to exchanging patient health information and to define data standards that are essential to the common sharing of health information. In addition, department officials stated that they are proceeding with a pharmacy data prototype initiative, begun in March 2004, to satisfy a mandate of the Bob Stump National Defense Authorization Act for Fiscal Year 2003 (P.L. 107-314, §724) as an initial step toward achieving HealthePeople (Federal). At this stage, however, they have not developed a strategy to explain how this project will contribute to defining the technological solution for the data exchange capability. As such, VA and DOD continue to lack a clearly defined architecture and technological solution for developing the electronic interface and associated capability for exchanging patient health information between their new systems. Moreover, the departments remain challenged to articulate a clear vision of how this capability will be achieved, and in what timeframe.</p> <p>Since 1998 VA and DOD have been trying to achieve the capability to share patient health care data electronically. The original effort—the government computer-based patient record (GCPR) project—included the Indian Health Service (IHS) and was envisioned as an electronic interface that would allow physicians and other authorized users at VA, DOD, and IHS health facilities to access data from any of the other agencies' 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.</p>

<b>Date/Report or Testimony</b>	<b>Summary of Findings<sup>a</sup></b>
March 17, 2004, GAO-04-402T	VA and DOD had made little progress since November 2003 toward defining how they intended to achieve the two-way exchange of patient health information under the HealthePeople (Federal) initiative. While VA officials recognized the importance of an architecture to describe in detail how the departments would electronically interface their health systems, they continued to rely on a less-specific, high-level strategy—in place since September 2002—to guide the development and implementation of this capability. The departments intended to rely on a pharmacy prototype project undertaken in March 2004 to better define the electronic interface needed to exchange patient health data, but had not fully determined the approach or requirements for this undertaking. Thus, there was little evidence of how this project would contribute to defining a specific architecture and technological solution for achieving a two-way exchange of patient health information. These uncertainties were further complicated by the absence of sound project management to guide the departments' actions on the HealthePeople (Federal) initiative. Although progress toward defining data standards continued, delays had occurred in VA's and DOD's development and deployment of their individual health information systems, critical for achieving the electronic interface.
November 19, 2003, GAO-04-271T	The one-way transfer of health information resulting from VA's and DOD's near-term solution—the FHIE—represented a positive undertaking and had enabled electronic health data from separated (retired or discharged) servicemembers contained in DOD's Military Health System Composite Health Care System to be transmitted monthly to a VA FHIE repository, giving VA clinicians more ready access to DOD health data, such as laboratory, pharmacy, and radiology records, on almost 2 million patients. The departments' longer-term strategy to enable electronic, two-way information sharing—HealthePeople (Federal)—was farther out on the horizon, and VA and DOD faced significant challenges in implementing a full data exchange capability. Although a high-level strategy existed, the departments had not clearly articulated a common health information infrastructure and architecture to show how they intended to achieve the data exchange capability or what they would be able to exchange by the end of 2005. Critical to achieving the two-way exchange was completing the standardization of the clinical data that the departments planned to share.
September 26, 2002, GAO-02-1054T	VA and DOD reported some progress in achieving the capability to share patient health care data under the Government Computer-Based Patient Record (GCPR) initiative. The agencies had, since March 2002, formally renamed the initiative the Federal Health Information Exchange and begun implementing a more narrowly defined strategy involving the one-way transfer of patient health data from DOD to VA; a two-way exchange was planned by 2005.
March 13, 2002, GAO-02-369T	VA had achieved limited progress in its joint efforts with DOD and the Indian Health Service to create an interface for sharing data in their health information systems, as part of Government Computer-Based Patient Record (GCPR) strategies for implementing the project continued to be revised, its scope had been substantially narrowed from its original objectives, and it continued to operate without clear lines of authority or comprehensive, coordinated plans. Consequently, the future success of this project remained uncertain, raising questions as to whether it would ever fully achieve its original objective of allowing health care professionals to share clinical information via a comprehensive, lifelong medical record.

<b>Date/Report or Testimony</b>	<b>Summary of Findings<sup>a</sup></b>
February 27, 2002, GAO-02-478T	<p>DOD's and VA's numerous databases and electronic systems for capturing mission-critical data, including health information, were not linked, and information could not be readily shared. DOD had several initiatives under way to link many of its information systems—some with VA. For example, to create a comprehensive, lifelong medical record for servicemembers and veterans and to allow health care professionals to share clinical information, the departments, along with the Indian Health Service, initiated the Government Computer-Based Patient Record (GCPR) project in 1998. However, several factors, including planning weaknesses, competing priorities, and inadequate accountability, made it unlikely that they would achieve a GCPR or realize its benefits in the near future. To strengthen management and oversight of the project, GAO recommended designating a lead entity with clear lines of authority for the project and the creation of comprehensive and coordinated plans for sharing meaningful, accurate, and secure patient health data. For the near term, DOD and VA had decided to reconsider their approach to GCPR and focus on allowing VA to access selected servicemembers' health data captured by DOD, such as laboratory and radiology results, outpatient pharmacy data, and patient demographic information. However, GCPR would not provide VA with access to information on the health status of personnel when they entered military service; on medical care provided to Reservists while not on active duty; or on the care military personnel received from providers outside DOD, including those from TRICARE.</p>
January 24, 2002, GAO-02-377T	<p>DOD improved its medical surveillance system under Operation Joint Endeavor. However, system problems included lack of a single, comprehensive electronic system to document and access medical surveillance data. Some DOD initiatives to improve information technology capability were several years away from full implementation. The ability of VA to fulfill its role in serving veterans and providing backup to DOD in times of war was to be enhanced as DOD increased its medical surveillance capability. GCPR was a joint DOD/VA initiative in conjunction with the Indian Health Service to link information systems. However, because of planning weaknesses, competing priorities, and inadequate accountability, it was unlikely that the departments would accomplish GCPR or realize its benefits in the near future. To strengthen management and oversight of the initiative, GAO again recommended designating a lead entity with clear lines of authority for the project and the creation of comprehensive and coordinated plans for sharing meaningful, accurate, and secure patient health data.</p>

Date/Report or Testimony	Summary of Findings <sup>a</sup>
October 16, 2001, GAO-02-173T	DOD and VA were establishing a medical surveillance system for the health care needs of military personnel and veterans. The system was to collect and analyze uniform information on deployments, environmental health threats, disease monitoring, medical assessments, and medical encounters. GAO identified weaknesses in DOD's medical surveillance capability and performance in the Gulf War and Operation Joint Endeavor, and uncovered deficiencies in its ability to collect, maintain, and transfer accurate data. The department had several initiatives under way to improve the reliability of deployment information and to enhance its information technology capabilities, although some initiatives were several years away from full implementation. VA's ability to serve veterans and provide backup to DOD in times of war was to be enhanced as DOD increased its medical surveillance capability. GCPR was one initiative to link the departments' information systems. However, because of planning weaknesses, competing priorities, and inadequate accountability, it was unlikely that they would accomplish GCPR or realize its benefits in the near future. To strengthen management and oversight of the initiative, GAO recommended designating a lead entity with clear lines of authority for the project and the creation of comprehensive and coordinated plans for sharing meaningful, accurate, and secure patient health data.
April 2001, GAO-01-459	In 1998, the Government Computer-Based Patient Record (GCPR) project was initiated by VA, DOD, and IHS, which was included in the effort because of its population-based research expertise and its long-standing relationship with VA. With accountability for GCPR blurred across several management entities, basic principles of sound IT project planning, development, and oversight have not been followed, creating barriers to progress. For example, clear goals and objectives have not been set; detailed plans for the design, implementation, and testing of the interface have not been developed; and critical decisions are not binding on all partners. In addition, GCPR plans have not resolved data incompatibilities and other differences that complicate the electronic exchange of health information among the three agencies' facilities. Finally, concerns related to developing a comprehensive strategy to guarantee the privacy and security of health information shared through GCPR have not been addressed.

**Sources:** GAO Reports and Testimony and U.S. Congress, House Committee on Veterans' Affairs, Subcommittee on Oversight and Investigations, *Sharing of Electronic Medical Information Between the U.S. Department of Defense and the U.S. Department of Veterans Affairs*, 110<sup>th</sup> Cong., 1<sup>st</sup> sess., October 24, 2007 (Washington: GPO, 2008), pp. 86-91.

**Notes:**

AHLTA= Armed Forces Health Longitudinal Technology Application

BHIE =Bidirectional Health Information Exchange

CHDR= Clinical Data Repository/Health Data Repository

DOD= Department of Defense

FHCC= Federal Health Care Center

FHIE= Federal Health Information Exchange

GCPR= Government Computer-Based Patient Record

IT= information technology

IHS= Indian Health Service

LDSI =Laboratory Data Sharing Interface

MHS= Military Health System

VA= Department of Veterans Affairs

VistA =Veterans Health Information Systems and Technology Architecture

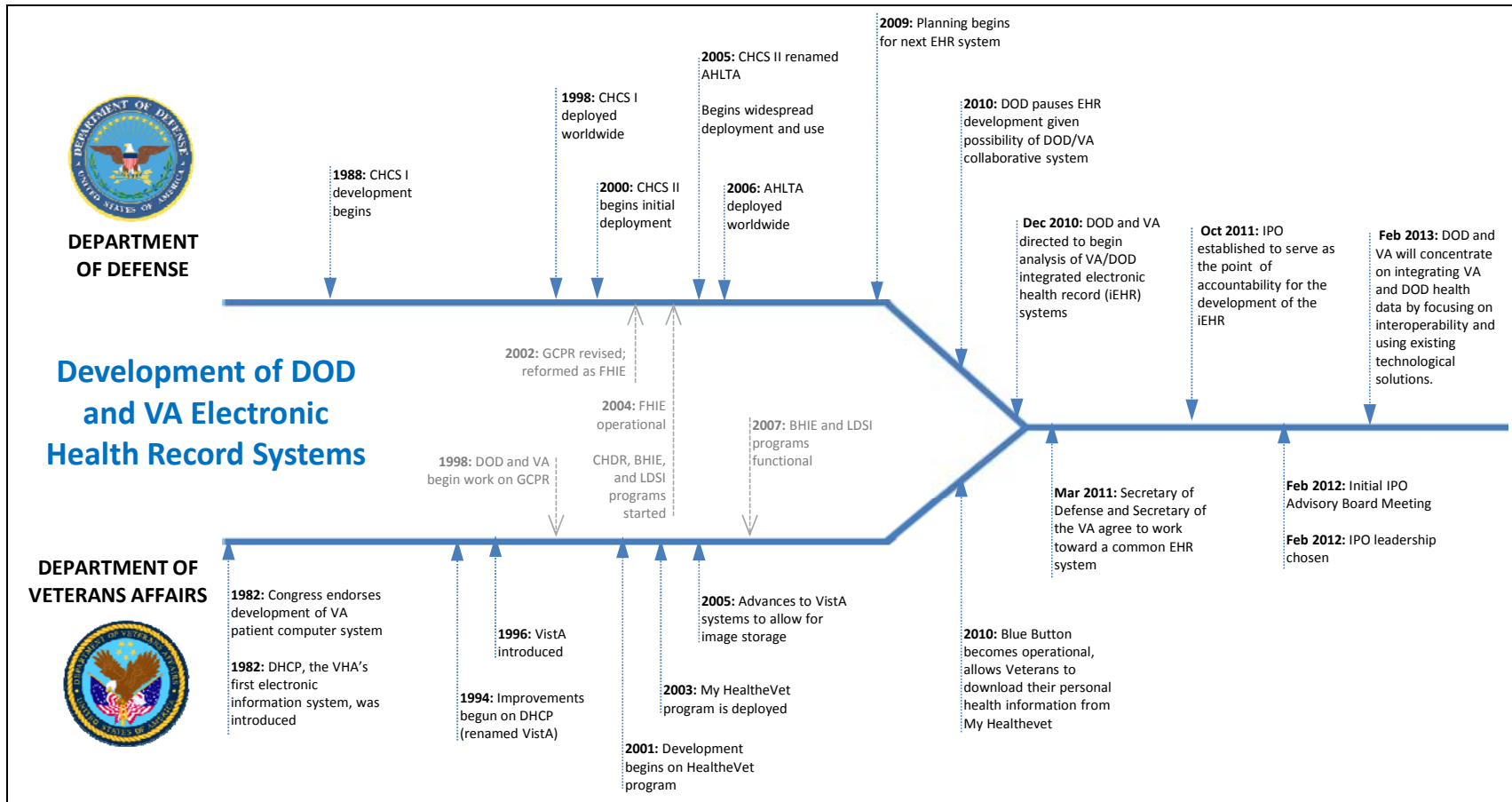
VHA= Veterans Health Administration

VLER =Virtual Lifetime Electronic Record

- a. Summaries have been adapted verbatim from GAO reports or have been paraphrased to highlight GAO findings pertaining to DOD-VA health information sharing.

# Appendix D. Milestones of Selected DOD and VA Health Records Development and Sharing Efforts

Figure D-I. Selected DOD and VA Health Records Development and Sharing Efforts



Source: CRS graphic based on information from the Department of Defense/Department of Veterans Affairs Interagency Program Office (IPO).

Notes: AHLTA= Armed Forces Health Longitudinal Technology Application

BHIE =Bidirectional Health Information Exchange

CHDR= Clinical Data Repository/Health Data Repository

DHCP= Decentralized Hospital Computer Program; precursor to the Veterans Health Information Systems and Technology Architecture(VistA)

DOD= Department of Defense

FHCC= Federal Health Care Center

FHIE= Federal Health Information Exchange

GCPR= Government Computer-Based Patient Record

LDSI =Laboratory Data Sharing Interface

MHS= Military Health System

VA= Department of Veterans Affairs

VistA =Veterans Health Information Systems and Technology Architecture

VHA= Veterans Health Administration

VLER =Virtual Lifetime Electronic Record



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