UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, DC 20301-4000

PERSONNEL AND
READINESS

APR 20 2011

The Honorable Carl Levin
Chairman, Committee on Armed Services
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

The Department is pleased to forward the enclosed Report on Status of Implementation of Recommendations in the U.S. Government Accountability Office (GAO) Report, "Information Technology: Opportunities Exist to Improve Management of DoD's Electronic Health Record Initiative," GAO-11-50, October 6, 2010. The report provides the status of the Department of Defense's efforts to implement each of the recommendations made in the GAO Report. Section 715(c) of the Ike Skelton National Defense Authorization Act for Fiscal Year 2011, Public Law 111-383, requires that the report be submitted to the congressional defense committees no later than March 31, 2011. I apologize for submitting this report late. Due to the speed in which this issue is moving, the Department conducted one last review to ensure that the included information is up-to-date. The GAO Report is also enclosed for your convenience.

Thank you for your interest in the health and well-being of our Service members, veterans, and their families.

Sincerely,

Clifford L. Stanley

Enclosures:
As stated

cc:
The Honorable John McCain
Ranking Member

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, DC 20301-4000

PERSONNEL AND
READINESS

APR 20 2011

The Honorable Jim Webb
Chairman, Subcommittee on Personnel
Committee on Armed Services
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

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As stated

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The Honorable Lindsey Graham
Ranking Member

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4000 DEFENSE PENTAGON
WASHINGTON, DC 20301-4000

PERSONNEL AND
READINESS

APR 20 2011

The Honorable Howard P. "Buck" McKeon
Chairman Committee on Armed Services
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

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The Honorable Adam Smith
Ranking Member

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, DC 20301-4000

PERSONNEL AND
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APR 20 2011

The Honorable Joe Wilson
Chairman, Subcommittee on Military Personnel
Committee on Armed Services
U.S. House of Representatives
Washington, DC 20515

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Enclosures:
As stated

cc:
The Honorable Susan A. Davis
Ranking Member

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, DC 20301-4000

PERSONNEL AND
READINESS

APR 20 2011

The Honorable Daniel K. Inouye
Chairman Committee on Appropriations
United States Senate
Washington, DC 20510

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The Honorable Thad Cochran
Vice Chairman

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APR 20 2011

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Chairman, Subcommittee on Defense
Committee on Appropriations
United States Senate
Washington, DC 20510

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PERSONNEL AND
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APR 20 2011

The Honorable Harold Rogers
Chairman Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

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Enclosures:
As stated

cc:
The Honorable Norman D. Dicks
Ranking Member

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, DC 20301-4000

PERSONNEL AND
READINESS

APR 20 2011

The Honorable C. W. Bill Young
Chairman, Subcommittee on Defense
Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

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cc:
The Honorable Norman D. Dicks
Ranking Member

January 31, 2011

Report on Status of Implementation of Recommendations in the U.S. Government Accountability Office (GAO) Report "Information Technology: Opportunities Exist to Improve Management of DoD's Electronic Health Record Initiative" GAO-11-50, October 6, 2010

Required by

Section 715(c) of Ike Skelton National Defense Authorization Act for Fiscal Year 2011

Preparation of this report cost the Department of Defense
a total of approximately $8,000 for the 2011 Fiscal Year.
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EXECUTIVE SUMMARY

This report is required by Section 715(c) of the Ike Skelton National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2011 (Public Law 111-383), which states that:

> the Secretary of Defense shall submit to the congressional defense committees a report on the report by the Comptroller General of the United States titled "Information Technology: Opportunities Exist to Improve Management of DoD's Electronic Health Record Initiative" (GAO-11-50), including—
>
> (1) the status of implementing the recommendations made in such report; and
>
> (2) for each such recommendation that has not been implemented, the reason why the recommendation has not been implemented.

The Military Health System (MHS) Office of the CIO (OCIO) is actively incorporating the GAO recommendations listed below into management practices for sustainment and stabilization efforts supporting the existing Electronic Health Record (EHR) capability and ongoing planning for the next generation EHR, referred to as the EHR Way Ahead. MHS will continue to:

[1] "Develop and maintain a comprehensive project plan that includes key elements, such as the project's scope, cost, schedule, and risks and update the plan to provide key information for stakeholders on the project's plans and status.

[2] "Develop a systems engineering plan in accordance with DoD guidance to address the technical complexities of delivering a worldwide EHR system.

[3] "Ensure that its requirements development process involves system users throughout the development process, to obtain an understanding of what will satisfy their needs.

[4] "Ensure the establishment of bidirectional traceability for all system requirements.

[5] "Develop and document a plan for improving user satisfaction that prioritizes improvement projects; identifies needed resources; includes schedules for improvement efforts, including future user feedback surveys; and links efforts to measurable outcomes and specific user needs.

[6] "Establish acquisition management processes in accordance with industry best practices, including identifying milestones and a completion date for the external evaluation that MHS's processes are at maturity level 2 of the Capability Maturity Model Integration for Acquisition [CMMI-ACQ].

"Further, to help ensure that the EHR Way Ahead does not have shortfalls similar to those experienced with AHLTA [i.e., to help guide and ensure the successful completion of the EHR Way Ahead effort], we recommend that the above six management practices be implemented as part of the planning for this important initiative."

The status reflected in this report is as of January 31, 2011. DoD would be pleased to provide the congressional defense committees with a status update in October 2011, subsequent to GAO's six month follow up review.

Because GAO's recommendations are related to DoD's EHR Stabilization and EHR Way Ahead efforts, we have provided overviews on these topics as appendices to this report.

I. OBJECTIVES, RECOMMENDATIONS, AND FINDINGS

A. Objectives

To help guide and ensure the successful completion of the AHLTA stabilization effort and the EHR Way Ahead, GAO sought to (1) determine DoD's status in implementing AHLTA[1], (2) determine the Department's plans for acquiring a new EHR system, and (3) evaluate the Department's acquisition management for its EHR system.

B. Status of Implementing GAO's Recommendations

By letter from the ASD(HA) to the Director, Information Management and Human Capital Issues, GAO, September 27, 2010 (DoD Response), DoD concurred with the recommendations ultimately stated in GAO-11-50. The status of implementing each recommendation presented below is as of January 2011.

1. Comprehensive Project Plan

GAO recommends, and DoD agrees, that AHLTA stabilization efforts must be governed by "a comprehensive project plan that includes key elements, such as the project's scope, cost, schedule, and risks and update the plan to provide key information for stakeholders on the project's plans and status."

Status: Upon completion of AHLTA Block 1 deployment in November 2006, the program entered the life cycle sustainment effort of the Block 1 operations and support phase. The program office developed and maintains the necessary project plans to support its sustainment efforts. The current programmatic focus is AHLTA/CHCS stabilization. AHLTA/CHCS stabilization addresses three objectives from the perspective of the end user: (1) increased operational availability; (2) increased performance; and (3) increased usability. The program office is developing the capabilities and the appropriate project management plans in accordance with DoD acquisition program guidelines to support this initiative. See Appendix A for an overview of EHR Stabilization Efforts.

EHR Way Ahead project plans prepared in support of an acquisition milestone decision will be developed in accordance with DoD acquisition guidelines. See Appendix B for an overview of the EHR Way Ahead.

[1] AHLTA, the DoD's electronic health record, was previously named CHCS II.

2. Systems Engineering Plan (SEP)

GAO recommends, and DoD agrees, that AHLTA stabilization efforts must be guided by "a systems engineering plan in accordance with DoD guidance to address the technical complexities of delivering a worldwide electronic health record system."

Status: The System Engineering Management Plan V1.0, 7 November 2003, guided the AHLTA program through its initial worldwide deployment. Upon completion of AHLTA Block 1 deployment in November 2006, the program entered the life cycle sustainment effort of the Block 1 operations and support phase. Based on DoD Instruction 5000.02, Operation of the Defense Acquisition System, December 8, 2008, a SEP is required to support Milestones A, B and C. Since Block 1 is in the operations and support phase (post-Milestone C), the program office does not plan to modify the existing plan. *[Note: In the Under Secretary of Defense for Acquisition, Technology, and Logistics systems engineering policy memorandum, dated February 20, 2004, DoD chose to call the document a "Systems Engineering Plan (SEP)." Systems Engineering Management Plan (SEMP) is a traditional term used previously in DoD and more common with industry. The SEP Preparation Guide, v2.0, clearly states there is no preference regarding the title of the technical planning document.]*

A SEP will be prepared in support of the next EHR milestone. See Appendix B for an overview of the EHR Way Ahead.

3. Requirements Development Process

GAO recommends, and DoD agrees, that AHLTA stabilization efforts must employ a "requirements development process [that] involves system users throughout the development process to obtain an understanding of what will satisfy their needs." MHS provides ongoing, comprehensive requirements development and management processes and a governance structure led by senior MHS leaders and decision makers to ensure that information technology (IT) solutions meet mission needs.

Status: The MHS is updating the January 2009 Requirements Development and Management Concept of Operations (CONOPS) to ensure alignment with the current MHS IT governance structure and strategic goals and objectives; document Tri-Service processes that engage Army, Navy, and Air Force subject matter experts and system users; and incorporate industry standards and best practices that support the development and management of IT business processes and functional requirements. These industry best practices and standards include, but are not limited to, Information Technology Infrastructure Library (ITIL), Capability Maturity Model Integration (CMMI), and Institute of Electrical and Electronics Engineers (IEEE). The CONOPS is on target for approval in the fourth quarter of FY 2011.

The MHS IM governance structure, comprised of senior MHS leaders, provides strategic IT oversight for the Clinical, Business, and Theater mission areas and, ultimately, prioritizes and approves funding for the MHS IT portfolio. The MHS IT governance structure empowers both stakeholders and user communities. The structure ensures that Clinical, Business, and Theater Portfolio Management Board members and subgroups raise and discuss IM/IT issues, makes the

best information available for decision making, facilitates decision making, provides recommendations, and ensures the proper documentation, communication and follow through occurs for any action items. Senior IM governance and leadership is provided by the MHS Integration Councils. The Councils have empowered the Clinical, Business, and Theater MHS Portfolio Management Boards to make strategic IM/IT recommendations. The Boards' primary objectives are to ensure field users are connected with strategic leaders and important issues and to balance user needs with the organization's strategic priorities.

4. Bidirectional Traceability

GAO recommends, and DoD agrees, that DoD must "[e]nsure the establishment of bidirectional traceability for system requirements." Bidirectional traceability for requirements maintains the linkage from the source of each requirement through its decomposition to implementation and verification. This traceability is required to ensure that all requirements are addressed, and that only what is required is developed.

Status: MHS requirements development and management processes, as documented in the IM CONOPS, support bidirectional traceability of requirements. These processes ensure transparency and provide the ability to reach across organizational boundaries. Evaluation of solutions to improve the documentation and management of requirements is underway. MHS will integrate a new capability with other tools used throughout the enterprise. We anticipate the acquisition and implementation of this capability during the first quarter of FY 2012.

5. User Satisfaction Plan

GAO recommends, and DoD agrees, that DoD should "[d]evelop and document a plan for improving user satisfaction that prioritizes improvement projects; identifies needed resources; includes schedules for improvement efforts, including future user feedback surveys; and links efforts to measurable outcomes and specific user needs for system requirements."

Status: The AHLTA program office completed worldwide deployment of AHLTA Release 3.3 in December 2010; the first major software release since AHLTA's initial worldwide deployment in December 2006. AHLTA Release 3.3 provides user-requested enhancements that improve health care provider workflow processes, to include the documentation of patient information in AHLTA. The program office is developing plans to survey users based on AHLTA Release 3.3. Conduct of the AHLTA 3.3 user survey is scheduled for CY 2011.

Usage and satisfaction—particularly with physicians—are critical factors in realizing the full potential of an EHR. MHS is striving to achieve maximum use and satisfaction of its services and products for all users across the enterprise. Currently, MHS is engaged in the planning and execution of user satisfaction measures identified in its IM/IT Strategic Plan for 2010 – 2015. MHS intends to measure end-user satisfaction with IM/IT products and services; this measurement will cover all users. To measure clinician user experience with our existing and future EHRs, MHS intends to employ a validated survey method, such as the Questionnaire For User Interaction Satisfaction (QUIS) developed by a multi-disciplinary team of researchers in the Human-Computer Interaction Lab (HCIL) at the University of Maryland at College Park. The QUIS measures user satisfaction in various domains (e.g., Overall User Reaction, Screen Design

and Layout, Terminology and System Messages, Learning, and System Capabilities). Adding demographic data to QUIS would enable MHS to drill into data to identify, for example, what specific aspects of the EHR are problematic for which user sub-populations.

6. Acquisition Management Processes

GAO recommends, and DoD agrees, that DoD must "[e]stablish acquisition management processes in accordance with industry best practices, including identifying milestones and a completion date for the external evaluation that MHS's processes are at maturity level 2 of the Capability Maturity Model Integration for Acquisition." DoD continues to follow DoD acquisition program guidelines and will establish a milestone for an external review in accordance with CMMI-ACQ guidelines.

Status: In accordance with MHS CIO policy 10-005, "Continuous Process Improvement," September 23, 2010, MHS IT programs will continue the development and implementation of processes and procedures that improve performance across the organization. In November 2010, MHS OCIO conducted an IT assessment based on the October 23, 2010, Standard CMMI Appraisal Method for Process Improvement Class A (SCAMPI A) assessment plan. OCIO IT managers will use the results of the assessment to develop corrective action plans by the third quarter of FY 2011. The planning, development, and implementation of these corrective action plans and process improvement initiatives will be managed within the OCIO Managers Internal Management Control Plan (MIC). MIC is a comprehensive program designed to implement effective and efficient internal controls on a day-to-day basis and to ensure compliance with all federal, DoD, and MHS guidance. OCIO plans to conduct a follow-on external SCAMPI A, in the fourth quarter of FY 2012, to ensure that MHS IT acquisition management processes are functioning at CMMI-ACQ maturity Level 2.

C. Findings

While DoD concurs with GAO's recommendations, the Department does not agree with each of GAO's findings. GAO stated that a comprehensive project management plan was not established to guide the department's execution of the system acquisition. The Department contends that the CHCS II Project Management Plan V 4.0 guided the Department's execution of the system acquisition. It was last revised in May 2005.

Further, GAO stated that a tailored systems engineering plan did not exist. The CHCS II Systems Engineering Management Plan V 1.0, dated November 2003, was in place to guide the technical development of the system.

Lastly, GAO stated that requirements were incomplete and did not sufficiently reflect user and operational needs. Early in the program lifecycle, functional requirements were developed; those requirements were updated in 2004. CHCS II operational requirements were developed based on the CHCS II Mission Needs Statement, January 28, 1997. The CHCS II Operational Requirements Document, V1.0, September 18, 2000 and CHCS II Operational Requirements Document, V 3.8, April 27, 2004, were developed and approved by Army, Navy, and Air Force senior medical leaders representing more than 77,000 AHLTA users worldwide. However, the

Department concurs that those system requirements do not sufficiently reflect current MHS user and operational needs.

II. CONCLUSION

MHS OCIO is fully engaged in efforts to integrate GAO's management practice recommendations in accordance with DoD guidelines and industry best practices applied to the existing EHR capability and the next generation EHR, the "EHR Way Ahead." The end result will be increasingly robust and comprehensive planning documentation to guide our efforts; refined user involvement in requirements development; greatly improved requirements traceability; an effective gauge of user satisfaction supporting strategic corrective action; and improved acquisition management practices leveraging proven industry best practices. These improvements will drive improvements in internal processes, enhance transparency and stakeholder involvement and ultimately help ensure MHS achieves its vision of seamlessly delivering the power of information to our stakeholders.

MHS OCIO looks forward to providing the congressional defense committees with future status updates on efforts to guide and ensure the successful completion of both the AHLTA stabilization effort and the EHR Way Ahead.

ACRONYMS AND ABBREVIATIONS

AoA	Analysis of Alternatives
ADM	Acquisition Decision Memorandum
ASD	Assistant Secretary of Defense
BHIE	Bidirectional Health Information Exchange
C32	Health Information Technology Standards Panel (HITSP) Summary Documents Using HL7 Continuity of Care Document (CCD) Component
CAPE	Cost Assessment and Program Evaluation Office
CHCS II	Composite Health Care System II (renamed AHLTA in November 2005)
CHCS	Composite Health Care System
CIO	Chief Information Officer
CMMI-ACQ	Capability Maturity Model Integration for Acquisition
CONOPS	concept of operations
COTS	commercial off-the-shelf
DASD	Deputy Assistant Secretary of Defense
DHIMS	Defense Health Information Management System
DHSS	Defense Health Services Systems
DISA	Defense Information Systems Agency
DoD	Department of Defense
DTC	Development and Testing Center
EHR	Electronic Health Record
ESB	enterprise service bus
FDDR	Full-Deployment Decision Review
FRPDR	Full-Rate Production Decision Review
FY	fiscal year
GAO	Government Accountability Office
HA	Health Affairs
HIT	health information technology

ICIB	DoD/VA Interagency Clinical Informatics Board
IEEE	Institute of Electrical and Electronics Engineers
IM	information management
IS	information sharing
IT	information technology
ITIL	Information Technology Infrastructure Library
JAL FHCC	Captain John A. Lovell Federal Health Care Center
MDA	Milestone Decision Authority
MEHRC	MHS Electronic Health Record Center
MHS	Military Health System
MTF	military treatment facility
NDAA	National Defense Authorization Act
NwHIN	Nationwide Health Information Network
OASD	Office of the Assistant Secretary of Defense
OCIO	Office of Chief Information Officer
ONC	Office of the National Coordinator
PIR	Post-Implementation Review
PMP	Project Management Plan
SCAMPI A	Standard CMMI Appraisal Method for Process Improvement Class A
SEP	System Engineering Plan
TC2	TMIP CHCS Caché
TMA	TRICARE Management Activity
TMDS	Theater Medical Data Store
TMIP	Theater Medical Information Program
SOA	service oriented architecture
VA	Department of Veterans Affairs
VistA	Veterans Information Systems and Technology Architecture
VLER	Virtual Lifetime Electronic Record

APPENDIX A - EHR STABILIZATION EFFORTS

MHS is currently executing the multi-year plan developed in Fall 2009 to redesign the EHR supporting infrastructure and incrementally deliver key functionality. At the threshold, MHS must stabilize current EHR capabilities so that users may efficiently perform their duties in a timely manner, regardless of location, time of day or network issues. In executing this plan, MHS is addressing known shortfalls and key challenges with functional applications and core infrastructure, including critical user concerns with system speed, operational availability and the user interface. The success of improvements will be measured from the end user's perspective. EHR stabilization will allow DoD to meet providers' near term needs, better prepare for the transition of applications and supporting infrastructure, and mitigate potential risks prior to increasing reliance on these systems to achieve expanded interoperability through the Virtual Lifetime Electronic Record (VLER) initiative.

The three primary areas for EHR stabilization are (1) increased operational availability as measured by the end user; (2) increased speed of the EHR as experienced by the end user; and (3) increased usability from the perspective of the end user. MHS, working with partners such as the Defense Information Systems Agency (DISA), has instituted changes to address the primary focus areas for EHR stabilization. DoD has completed the deployment of several key stabilization efforts; others are currently in deployment, development or acquisition. The following paragraphs describe the efforts involved in each phase at a high level.

Completed Stabilization Efforts: MHS has completed numerous stabilization efforts, including circuit upgrades, network protection suite improvements, enterprise remote access, increased protection suite for MHS healthcare data, upgrades to local and wide area networks (LAN/WAN) at military treatment facility (MTF) host sites, replacement of MTF-based servers, and multiple software upgrades focused on downtime reduction. Most recently, in December 2010, MHS completed full deployment of AHLTA 3.3 to all 151 MTFs.

The AHLTA 3.3 software enhances system performance and speed as well as DoD/Veterans Affairs (VA) Sharing and provider capabilities. AHLTA 3.3 is designed to minimize systems transitions between encounter sub-modules, support asynchronous loading of data, automatically refresh notifications, and increase the speed of the order entry connection/login using an asynchronous capability.

The AHLTA 3.3 service pack 1 contains more than 200 user requested fixes and enhancements to improve system usability through medication reconciliation and printing capabilities and print features enabled for laboratory, radiology, vital signs and problem lists. The service pack also features integrated immunizations for automated procedure workload capture, special flags, Personnel Reliability Program (PRP) status alert, capability to undo patient check-in and for administrative personnel to close encounters, questionnaire enhancements, and the clinically relevant grouping of a patient's clinical problems in a clinically relevant manner (e.g., acute vs. chronic).

Stabilization Efforts in Deployment: DoD is in the process of deploying software releases and performing critical integration and upgrades needed to achieve additional stabilization goals for the garrison and theater EHR capabilities.

Bidirectional Health Information Exchange (BHIE): DoD/VA sharing enhancements to BHIE help ensure that DoD and VA providers may view clinical information in real time for patients receiving care in either agency's health system via the exchange as health data sharing capabilities expand. Key changes support future planned electronic health data sharing via VLER through the Nationwide Health Information Network (NwHIN). MHS is improving the BHIE framework interfaces to allow for integration of VLER and BHIE. The improvements support viewing of a subset of the data from an EHR or personal health record system. This subset, known as a Health Information Technology Standards Panel (HITSP) Summary Documents Using HL7 Continuity of Care Document (CCD) Component (C32) document, is developed for interoperability purposes for specific business Use Cases and received via NwHIN. MHS is weaving the capability to view C32 (and other Network standards-based documents) into a combined BHIE/VLER/NwHIN viewer. BHIE capabilities will transition to NwHIN standards based exchange mechanisms.

Theater: MHS is enhancing the functionality of the theater suite by adding desired AHLTA-Theater, TMIP CHCS Caché (TC2) and TMIP framework functionality. With the release of TMIP Block 2 Release 1, DoD is rolling out expanded AHLTA Mobile tools for first responders, including documentation, data access, reference libraries and medical resources. The AHLTA Theater component extends the sustaining base EHR capability look and feel to the theater of operations. TC2 integration provides documentation for theater inpatient healthcare and ancillary services order entry and result reporting in the deployed environment. Finally, upgrades to the TMIP framework being deployed as part of this effort will support improved transmission of electronic records and other medical information from the theater of operations to repositories in the continental United States.

Other theater-focused improvements include the rollout of a Deployable Tele-Radiology System, which provides healthcare providers in Operation Iraqi Freedom/Operation Enduring Freedom with access to radiographic images in theater for tele-radiology, and transfers images back to definitive care in garrison. The Theater Medical Data Store (TMDS) is the authoritative theater database for collecting, distributing and viewing Service members' pertinent medical information. TMDS further expands deployed providers' view of health information across all levels of care in theater by supporting access to garrison health records.

Stabilization Efforts in Development or Acquisition: DoD will develop or acquire additional stabilization solutions as part of the pre-program risk reduction phase to be executed prior to the EHR Way Ahead. This risk reduction phase is designed to provide MHS with a standards-based interoperability framework and a solid infrastructure framework to further increase operational availability, speed and usability of legacy applications and prepare for the transition to next generation EHR capabilities. This risk reduction phase will stabilize current EHR applications (AHLTA/CHCS) and infrastructure, and will set the stage for modernization activities, taking advantage of opportunities afforded by Captain John A. Lovell Federal Health Care Center (JAL FHCC). Further, it will provide standards based interoperability with VA through the NwHIN and implement several capabilities that will be leveraged for transition to next generation EHR capabilities.

Pre-program risk reduction activities include core functional and infrastructure efforts. Core functional efforts include –

AHLTA/CHCS Critical Fixes and Support: Critical fixes for AHLTA/CHCS will improve the infrastructure, allowing the application to perform more reliably and faster. These fixes will also address software defects.

Single-Sign On with Context Management (SSO/CM): The SSO/CM solution will satisfy the need at JAL FHCC and ultimately the entire MHS for providing clinical users a secure, unified access to clinical data at the point of care. The solution will dramatically simplify access to clinical information and provide caregivers with a more comprehensive and integrated view of a patient's healthcare. Single Sign On integrates the user's workspace by allowing a single sign on between medical applications, simplifying access, while Context Management extends the user workspace integration by maintaining the same patient (context) between each application, which improves usability and patient safety. Upon application sign on and selection of a patient, the user is also signed on to any other medical applications with the same patient selected. SSO/CM will be used across DoD and VA clinical applications at JAL FHCC. The SSO/CM solution will also support MHS enterprise-wide requirements.

Graphical User Interface (GUI) Portal Framework: A unified GUI portal framework will be implemented to support JAL FHCC, with expansion to the remainder of the MHS enterprise. The GUI portal framework will support a common access point for health information and capabilities and will allow ongoing and subsequent development efforts to be more easily "plugged in and unplugged." The GUI portal framework will be the MHS platform component through which MHS applications can be accessed for viewing, retrieving, entering and accessing data, and for verifying application interoperability. The MHS GUI portal framework will host discrete pieces of functionality through standards compliant portlets. The solution will work collaboratively and seamlessly with the SSO/CM solution. The framework is user tailorable, giving users the capability to maximize, minimize, add or delete portlets.

Core infrastructure efforts include –

Enterprise Service Bus (ESB): The MHS ESB is a core infrastructure element that supports increased HIT interoperability. An ESB provides messaging services that ensure access for applications via standard protocols, and supports interoperability and data sharing. DoD will use the MHS ESB to help eliminate many point-to-point connections; increase speed and performance of MHS applications; and support information interoperability and data sharing within MHS, and among MHS, VA and civilian treatment facilities. The MHS ESB will be implemented initially to fulfill inter-application messaging requirements for JAL FHCC. The ESB will provide the common link between VistA and AHLTA/CHCS for orders portability for laboratory, radiology, pharmacy and consults for JAL FHCC. Once operational, the ESB will support applications needed to meet JAL FHCC's identified functional requirements.

DoD will use a phased approach to ESB implementation: Phase I focuses on proving out the proposed technology at JAL FHCC; Phase II includes further analysis and planning and further proving out of the proposed technology in a large medical region; and Phase III includes expansion of this foundational technology across the enterprise. This technology is expected to sunset multiple point-to-point connections and existing, divergent ESB and ESB-like projects currently in the MHS inventory (e.g., TMIP Framework, iXP).

Consolidated MHS Development and Test Center: DoD stabilization plans include the stand up of a Consolidated MHS Development and Test Center. The facility will provide MHS with a dedicated, fully functional, environmentally controlled common development and testing environment that is not controlled by an integration contractor.

Enterprise Level Virtualized Information Services: As part of risk reduction efforts for the EHR Way Ahead, MHS will provide for an operationally-relevant Enterprise Level Virtualized Information Services environment for the 42 MHS centrally managed applications using "best of breed" commercial off-the-shelf (COTS) technologies. These services will support current applications that can be virtualized, as well as the "end state" EHR applications and systems. This platform is critical to the migration of the AHLTA end-user client from 110,000 end user devices (EUDs) to a more manageable server environment. The new environment will simplify the process of software maintenance and updates, reduce Tier I errors due to conflicting configurations on the EUDs, and improve overall application stability by ensuring adequate processor and memory capacity to handle the application. This capability will also enhance usability, allowing end users to access EHR capabilities from any secure web device.

AHLTA virtualization efforts will improve availability of the application to the user, simplify support and improve update time to market. Virtualization entails moving applications off the personal computer desktop so every workstation has access to needed applications via the Web. This allows any workstation to be used for a clinical, business or other focus. Other benefits of virtualization include easier use of different "Web appliances" such as tablets, laptops and other devices, and the ability to more easily add or replace backend systems (as is anticipated with the EHR Way Ahead), with far less disruption to the user community.

In addition to these core functional and infrastructure efforts, DoD intends to provide comprehensive sustainment support services to the enterprise. MHS MTFs rely on MHS systems for effective and efficient operations to provide quality healthcare to the military beneficiary population, and overarching sustainment services are crucial to ensuring the required system availability for provision of care. Sustainment support provides comprehensive system maintenance, logistical operations and maintenance, site operations and subject matter expertise support for CHCS and AHLTA, with the goal of providing appropriate and sustaining clinical systems support to ensure continuing operational availability. MTFs rely on these systems for effective and efficient operations to provide quality healthcare to the military beneficiary population. Sustainment support will include system engineering, security accreditation, Tier III, beta site support for new software releases, and maintenance, to ensure a continuity of operations for AHLTA so that doctors in DoD hospitals and clinics have the complete medical record to make informed medical diagnoses for their patients.

AHLTA/CHCS stabilization and sustainment efforts, coupled with the implementation of the solutions described above, will move MHS closer to achieving a comprehensive, enhanced suite of EHR applications supported by stable, robust enterprise architecture. Completion of these activities will stabilize the current EHR application foundation and provide the initial core infrastructure required to support EHR modernization efforts.

APPENDIX B - EHR WAY AHEAD INITIATIVE

The Military Health System (MHS) Electronic Health Record (EHR) transformation and associated EHR Way Ahead acquisition activities are anticipated to address DoD and national interoperability objectives (including Virtual Lifetime Electronic Record (VLER) and Nationwide Health Information Network data sharing initiatives); modernize the EHR family of applications; enhance usability; improve clinical decision support; empower patients through access to personal health record solutions; and increase system performance and data availability through network modernization.

DoD EHR Way Ahead is funded in the DoD Fiscal Year (FY) 2012 President's Budget Request. The FY 2012 President's Budget Position for FY 2012 remained the same as the FY 2011 President's Budget Position for FY 2011. Cost, schedule and performance objectives will be specific to the selected Preferred Alternative based on the results from the EHR Analysis of Alternatives (AoA). An AoA is required by Subtitle III of title 40 United States Code. This analytical comparison of operational effectiveness, suitability, and life-cycle cost of alternatives that satisfy established capability needs will precede any decision to pursue a new investment in capabilities. The AoA process is managed by clinical functional representatives through the Office of the Deputy Assistant Secretary of Defense for Clinical Programs and Policy (DASD, C&PP).

MHS EHR transformation is focused on sustainment activities for current clinical systems, the consolidation of clinical ancillary application development efforts, and shared support resources needed in clinical informatics and systems engineering to support the Preferred Alternative's acquisition strategy.

The EHR Way Ahead efforts, more specifically embodied by current EHR Planning Office activities, concentrate on requisite acquisition plans, artifacts, and milestones required under the DoD 5000 Acquisition Category 1 requirements. Acquisition activities include posturing for a program office designation, continued stakeholder collaboration via Working-Level Integrated Product Teams (IPTs) (Testing and Evaluation, Systems Engineering and Information Assurance, Cost and Requirements, Acquisition Strategy, and Integrating IPT), and ongoing acquisition documentation efforts in accordance with acquisition regulations.

EHR efforts will continue in the synchronization DoD and VA plans for future EHR capabilities. A DoD-VA EHR Senior Coordinating Group has established and staffed six teams to investigate and analyze key objectives for EHR planning efforts; namely the Enterprise Architecture, Data Interoperability, Business Process, Systems Capabilities Presentation Layer, and Mission Requirements and Performance Outcomes Teams.

APPENDIX C – MHS REORGANIZATION: THE MHS ELECTRONIC HEALTH RECORD CENTER (MEHRC)

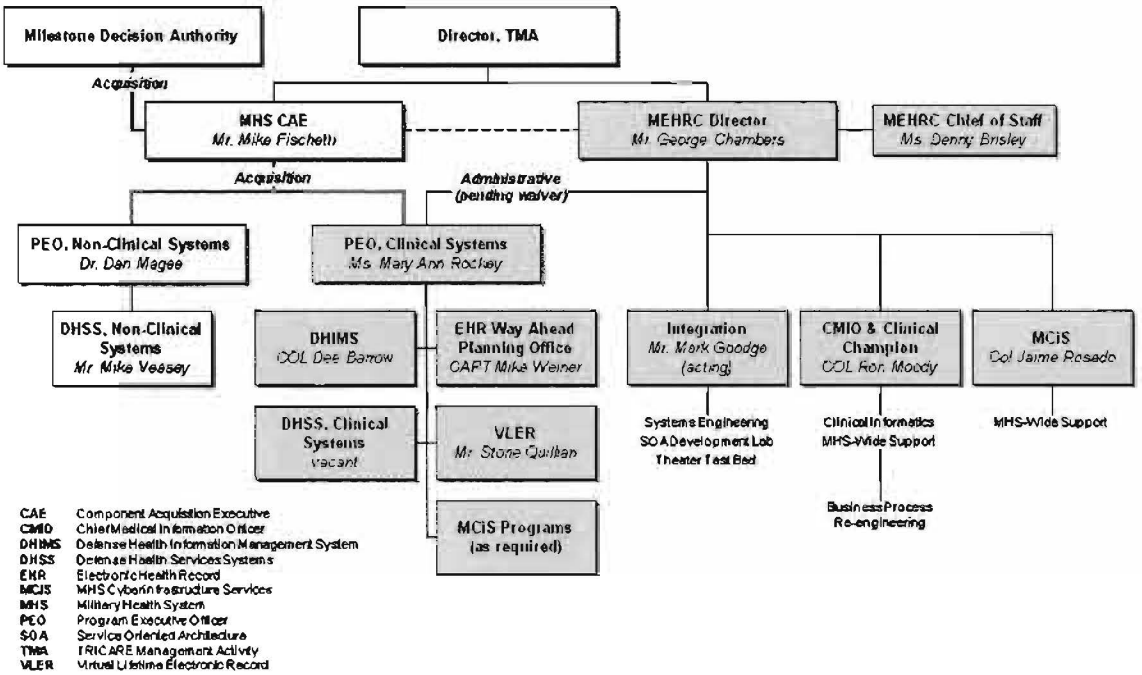
As of January 18, 2011, MHS realigned resources affecting the Office of the CIO and consolidated EHR-related activities under a central organization, MHS Electronic Health Record Center (MEHRC), to baseline and stabilize sustainment operations as well as streamline development work on current and soon to be deployed capabilities. (See organization charts on the following page.)

As a result of this reorganization, the Office of the CIO is restructured to core IT functions with the CIO chairing the IT Integrating Council, to oversee, direct and hold accountable the overall MHS Health IT portfolio. Execution of programs is better aligned under DoD Acquisition Policies and best practices to assure accountability and program delivery. Realignment actions will minimize disruptions in current program execution in clinical and non-clinical systems.

MEHRC provides functional expertise in legacy clinical programs, EHR development, and information technology (IT) transition to ensure an undivided focus on the EHR and the support of clinical care. MEHRC is directed by George Chambers, Principal Advisor (EHR) to the Office of the Assistant Secretary of Defense - Health Affairs. Staffing for critical capabilities will continue through third quarter of FY 2011.

In addition to creating the MEHRC, a single Program Executive Office (PEO) is in place for current and future clinical systems acquisition with dual reporting and specified Program Offices, led by trained and credentialed Program Managers (PMs) and dedicated staffs. This PEO is dedicated with executive management responsibilities for current and future acquisitions in support of the MHS EHR transformation. The PEO will be a part of the MEHRC and will report to the TMA Component Acquisition Executive. Aligned under this PEO will be EHR Way Ahead and VLER planning, Defense Health Information Management System (DHIMS) products and services, former Defense Health Services Systems (DHSS) clinical systems, and programs related to MHS Cyberinfrastructure Service (MCiS) products and services. The role of MCiS is to assure an effective network and technical infrastructure is in place for core mission, clinical capabilities, and associated benefits administration. Under the reorganization, a single PEO also is designated for non-clinical systems.

MHS EHR Center (MEHRC)



MHS Office of the CIO (OCIO)