



**THE ASSISTANT SECRETARY OF DEFENSE**

1200 DEFENSE PENTAGON  
WASHINGTON, DC 20301-1200

**HEALTH AFFAIRS**

The Honorable Carl Levin  
Chairman, Committee on Armed Services  
United States Senate  
Washington, DC 20510-6050

**APR 19 2007**

Dear Mr Chairman

I am pleased to forward the enclosed report, as requested by House Report 109-464, accompanying the Military Quality of Life and Veterans Affairs, and Related Agencies Appropriations Bill for Fiscal Year (FY) 2007. This report addresses the Committee's concerns to fund Department of Defense (DoD) Defense Health Program (DHP) information technology projects that are geographically localized or cannot be implemented Defense-wide in the future.

The report provides an analysis of the DoD's DHP information technology needs by examining the DoD and Department of Veterans Affairs (VA) information sharing initiatives and the Military Health System (MHS) centrally funded Information Management/Information Technology program.

DoD and VA are committed to delivering information technology solutions that significantly improve the secure sharing of appropriate electronic health information. Local and regional initiatives, mandated by the FY 2003 National Defense Authorization Act, serve useful roles in piloting and validating potential enterprise-wide DoD and VA information sharing solutions. Through Portfolio Management, Enterprise Architecture, and Defense Business Transformation processes, the MHS is committed to a strict review and approval process for its information technology systems.

Thank you for your continued support of the Military Health System.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Ward Casscells".

S. Ward Casscells, MD

Enclosure  
As stated

cc  
The Honorable John McCain  
Ranking Member

**Report to Congress**



**Report on Procurement of Information Technology Systems**

**Required by:**

**Military Quality of Life and Veterans Affairs, and Related Agencies**

**Appropriations Bill for Fiscal Year 2007**

**and**

**House Report 109-464**

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## REPORT ON PROCUREMENT OF INFORMATION TECHNOLOGY SYSTEMS

### Background

This report was requested by House Report 109-464, accompanying the Military Quality of Life and Veterans Affairs, and Related Agencies Appropriations Bill for Fiscal Year (FY) 2007. House Report 109-464 included the following text:

*Procurement of Information Technology Systems.* The Committee is concerned with the increased number of requests it receives for procuring information technology systems for the Defense Health Program. Many of these requests are for geographically localized systems to improve information sharing with the Department of Veterans Affairs, consolidating and upgrading hardware, software packages for reviewing and auditing data, geographic information system tools, and assorted other information technology issues. While many of these requests represent worthy products, implementing multiple systems in multiple locations could ultimately lead to more problems with system interoperability rather than fewer problems. The Committee directs the Department to include a detailed report on its information technology needs in future budget submissions. The Committee will be reluctant to fund projects that are geographically localized or cannot be implemented Defense-wide in the future.

## **Executive Summary**

This report provides a review of the Department of Defense's (DoD) Defense Health Program (DHP) information technology (IT) needs by examining the DoD and Department of Veterans Affairs (VA) information sharing initiatives and the Military Health System (MHS) centrally funded Information Management /Information Technology (IM/IT) program.

The DoD and Department of Veterans Affairs (VA) have developed local and regional initiatives to improve sharing of clinical information between the two Departments as mandated by the Fiscal Year (FY) 2003 National Defense Authorization Act (NDAA). The FY 2003 NDAA also established the Joint Incentive Fund (JIF) to identify, fund and evaluate creative local, regional and national sharing initiatives. Implementing local or regional initiatives allows the Departments to pilot and validate information sharing solutions for enterprise-wide deployment. These local initiatives, if validated, can then be incorporated into the MHS centrally managed IM/IT program.

The MHS IM/IT centrally funded program supports the defense health mission by providing Tri-Service information systems and applications used at DoD hospitals and clinics worldwide. Each initiative's requirements are reviewed and managed using the MHS portfolio management process, the MHS enterprise architecture, and application of the Defense Business Transformation program.

## **Introduction**

The Military Health System encompasses all levels of health care from battlefield to definitive care at military treatment facilities (MTFs) worldwide and includes health care services purchased from private sector partners or through sharing agreements with our federal sector partners. This scope of operations presents a unique challenge for providing integrated health care within the MHS. The MHS Information Management/Information Technology mission is to provide the IT tools necessary for health care support across the full range of military operations and for all beneficiaries entrusted to our care.

In addition to providing enterprise-wide IM/IT solutions to support the MHS mission, the MHS also supports local and regional initiatives to improve information sharing between the DoD and Department of Veterans Affairs. These initiatives are authorized, approved and funded under the FY 2003 NDAA and JIF. The FY 2003 NDAA demonstration projects and JIF initiatives are described in the **DoD/VA Sharing Initiatives** section of this report.

The major MHS IM/IT enterprise-wide centrally managed IM/IT initiatives are described in the **MHS IM/IT Programs** section of this report. Appendix A provides a listing and short description of MHS centrally managed IM/IT initiatives. These programs are supported by Defense Health Program (DHP) Operations & Maintenance (O&M), Procurement, and Research, Development, Testing, and Evaluation (RDT&E) appropriations.

Lastly, to ensure that system duplications and interoperability problems are prevented, the MHS IM/IT program management utilizes oversight and support management processes to include Portfolio Management, Enterprise Architecture, E-Government Activities and Defense Business Transformation. These functions are described in the

**MHS IM/IT Initiative Oversight** and Defense Business Transformation sections of this report.

### **DoD/VA Sharing Initiatives**

DoD and VA are working aggressively together to improve the flow of clinical information between the two Departments. We have jointly developed a strategic plan that provides a roadmap, have implemented major information sharing programs that are being continuously expanded and are conducting numerous prototypes and demonstration projects to explore even better ways to use clinical information to provide better care for our beneficiaries.

In some cases it makes sense to explore solutions initially using a subset of beneficiaries or facilities in order to mitigate risk while analyzing alternative approaches. For example, IT projects under the auspices of the Joint Incentive Fund (JIF) and NDAA Demonstration site initiatives have enabled us to work with clinicians and technologies at selected VA and DoD hospitals to better understand the clinical needs of the providers who are on the front line of health care delivery. These projects also enable us to better understand the technical and procedural challenges that will be confronted if broader implementation of the locally implemented solution is considered. These projects are monitored by joint DoD-VA oversight staff to ensure that lessons-learned are shared among the projects and with those responsible for the development of solutions for the joint DoD-VA enterprises.

In support of the VA/DoD Joint Strategic Plan, the **Joint Electronic Health Records Interoperability (JEHRI)** Program addresses the Departments' enterprise-wide plans to improve sharing of health information; adopt common standards for architecture, data, communications, security, technology and software; seek joint procurement and building of applications, where appropriate; seek opportunities for sharing existing systems and technology; explore convergence of DoD and VA health information applications

consistent with mission requirements; and achieve interoperability of health data through data repositories. The JEHRI Program supports incremental progress in sharing electronic health information to achieve health data interoperability, support transition from active duty status to veteran status, and enhance continuity of care. It operates under the VA/DoD Health Executive Council (HEC) IM/IT Work Group which is co-chaired by the DoD MHS CIO and the Veterans Health Administration CIO. The JEHRI initiative encompasses Federal Health Information Exchange (FHIE), Bi-directional Health Information Exchange (BHIE), Clinical Data Repository/Health Data Repository (CHDR), CHDR-BHIE interface, Laboratory Data Sharing Initiative (LDSI) and BHIE-Clinical Information System (CIS) interface.

JEHRI also supports the goals of the American Health Informatics Community for Electronic Health Records (EHRs) and sharing electronic health information. The national model for sharing electronic health information is not being proposed on the basis of identical software and data repositories, but rather on the use of standards to ensure interoperability.

**VA/DOD HEALTH CARE SHARING JOINT INCENTIVE FUND (JIF)  
ESTABLISHED BY THE FY 2003 NATIONAL DEFENSE AUTHORIZATION  
ACT**

The FY 2003 National Defense Authorization Act (NDAA), Public Law 107-314, Section 721, required that DoD and VA establish a joint incentives program, through the creation of a DoD/VA Health Care Sharing Incentive Fund. The intent of the program is to identify, fund and evaluate creative local, regional and national sharing initiatives.

The VA/DoD Financial Management Workgroup designated a panel to review the proposals. The panel was comprised of members from the VHA Resource Sharing Office, the Office of Patient Care Services, the Office of the Deputy Under Secretary for Health for Operations and Management, Veterans Integrated Service Network 5, Office



of Health Informatics and from DoD Services, Health Affairs and TRICARE Management Activity. As of the end of FY 2006, 47 JIF projects have been selected and funded at a total of \$88.8 million of the \$90 million deposited to date. Four of these projects involve data sharing and synchronization, those of which are managed by central IM/IT and one is being managed by the Air Force medical department. These projects enable DoD and VA to validate the requirement and obtain end-user feedback to ensure that the technical solution efficiently supports the clinical and/or administrative workflow. Additionally, these projects allow the Departments to determine the best approaches for ensuring that the technical solution meets privacy and security requirements as well as allow DoD and VA to determine the best implementation processes to minimize disruption to the medical facilities. This approach enables DoD and VA to explore a number of technical solutions to different types of information sharing needs. The projects, whether they have a local, regional or enterprise focus, are reviewed at least quarterly by a joint oversight structure of the VA and DoD to ensure that lessons learned are captured and available to share with other facilities and with program offices which are working on enterprise wide sharing projects.

The JIF projects that involve health care information sharing are described below:

*VA Central Office/TRICARE Management Activity (CO/TMA) (Medical Enterprise Web Portals)*

The Medical Enterprise Web Portals initiative was selected to advance common policies, standards, and joint portability requirements between the agencies and will develop the ability to exchange information between the DoD's TRICARE On-line (TOL) and the VA's My HealtheVet (MHV) Web portals to include the personal health record and prescriptions for DoD and VA beneficiaries. DoD and VA are collaborating to establish the overall policies surrounding the DoD and VA Web portals to determine what can and should be standardized across the portals to support a common patient view, and provide a smooth transition for service members moving to veteran status. Key areas of

coordination include, standardizing health content, identification of joint portability functional requirements, collaboration on the design of the Personal Health Record and Role-based Access Control (RBAC) and Role-based Account Administration.

*VA Central Office/Defense Supply Center Philadelphia (CO/DSCP) (Medical/Surgical Supply Data Synchronization)*

This initiative is an ongoing opportunity to synchronize the medical/surgical catalog data and pricing used by both the VA and DoD. The first phase of this project resulted in the synchronization of approximately 50,000 medical/surgical items in the VA National Item File with 50,000 items in the DoD Master Catalog. Phase 2 is focusing on the development of the mechanisms to distribute the synchronized data to the retail level (i.e., VHA and DoD health care facilities) of the supply chain. This will provide the medical facility end users that are ordering medical/surgical products with current, accurate product data to ensure they obtain the correct item requested by care providers at the lowest authorized Federal price. This will position the VA and DoD to gain knowledge of what medical/surgical items are being purchased from which manufacturers in order to leverage Federal buying powder to obtain the lowest negotiated prices.

Synchronized catalog data will be made available to end users to ensure accurate medical/surgical product purchases at the lowest VA/DoD authorized price. This endeavor to expand and link current VA and DoD synchronization efforts ultimately will allow the VA and DoD to jointly identify common products and maximize joint buying power for these products through negotiated volume purchasing contracts.

Medical/Surgical Supply Data Synchronization was selected to provide the ability to synchronize the medical/surgical catalog data (particularly manufacturer name, item ID, and packaging) and pricing among four VA/DoD components:

- Distribution and Pricing Agreements (DAPAs)
- Federal Supply Schedules (FSSs)

- DoD Master Data Sync database
- National Item File (NIF)

*Digital Imaging (South Texas VAHCS/Wilford Hall Medical Center (WHMC))*

This is a two phase project. Phase I is a comprehensive assessment of imaging requirements for the sharing of medical images between the VA and DoD. These requirements will be used as the basis to determine the feasibility of implementing a near-term sharing capability, during Phase II, in San Antonio between the VA and DoD facilities there, i.e., Wilford Hall Medical Center, Brooke Army Medical Center, Audie Murphy VAMC, North Central VA/DoD Outpatient Clinic and potentially other locally planned joint outpatient clinics.

**DOD-VA HEALTH CARE RESOURCES SHARING AND COORDINATION  
UNDER SECTION 722 OF THE FY 2003 NATIONAL DEFENSE  
AUTHORIZATION ACT**

Section 722 of the FY 2003 National Defense Authorization Act (NDAA) mandated Information Management/Information Technology Demonstration Site selection and incremental funding of joint and proximally located VA and DoD sites to demonstrate the feasibility and effectiveness of measures designed to improve the sharing of health care and health care resources. The Departments were directed to select sites in each of three areas:

1. Budget and financial management system
2. Staffing and coordinated assignment system
3. Medical information and information technology management systems

Seven demonstration projects were implemented in the 1<sup>st</sup> Quarter of FY 2005. The program will evaluate the success of demonstration projects designed to improve the coordination of health care resources between VA and DoD for application elsewhere. The DoD-VA oversight entity, the Joint Facility Utilization and Resource Sharing Workgroup, is collecting lessons learned from the demonstration sites for dissemination to other sharing sites and with the program offices responsible for implementing information technology solutions across the DoD and VA enterprises. For each of these projects, the local implementations are being used as a test bed for a broader enterprise-wide implementation of these capabilities, if they prove beneficial and the business case is validated. Through this process we have identified needed changes to improve efficiency and to more fully meet the needs of the end-users. Thus, we have been able to develop better products while minimizing the disruption to the medical facilities.

The information technology demonstration projects approved by the HEC are as follows.

*El Paso VA HCS – William Beaumont AMC*

This project has three information technology major goals:

1. Implement Laboratory Data Sharing Initiative (LDSI): LDSI facilitates the electronic sharing of chemistry laboratory order entry and results retrieval. Benefits from this project include more efficient use of human resources and improved timeliness eliminating the need for manual entry of results. LDSI was successfully implemented in early FY 2005. In FY 2007, the LDSI project will be expanded to include anatomic pathology and microbiology using Logical Observation Identifiers Names and Codes (LOINC) and Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT). Site testing of this expanded functionality is scheduled to begin in December 2006.
2. Implement Bidirectional Health Information Exchange (BHIE): BHIE was successfully implemented early in FY 2005. BHIE data is shared bidirectionally, in real time, and with viewable data for use by VA and DoD health care providers. The data available for viewing includes: demographics, allergies, outpatient pharmacy data, as well as laboratory and radiology results.
3. Participate in the design, development and validation of sharing of reference quality radiology images. A goal added during 2006 is to develop, demonstrate and validate a bidirectional medical image sharing capability that leverages existing enterprise capabilities in both DoD/VA such as Digital Imaging Network-Picture Archiving and Communications System (DINPACS) and Veterans Health Information System and Technology Architecture (VistA) Imaging. Enterprise sharing efforts such as the Federal Health Information Exchange (FHIE) and BHIE will also be leveraged to reduce costs, reduce risk and ensure an enterprise solution focus is maintained throughout the project.

## *Puget Sound VA HCS – Madigan AMC*

The Team Puget Sound (TPS) has two goals:

1. Implement Bidirectional Health Information Exchange (BHIE) which provides real-time access to a subset of outpatient clinical data for VA and DoD clinicians using BHIE. Successful testing and implementation of Phase I (outpatient pharmacy and allergy data) occurred in October 2004 followed by Phase II (radiology results and laboratory chemistry, hematology, microbiology, and surgical pathology results) testing and implementation in May 2005. DoD and VA continue to use BHIE to view data on shared patients.
2. Make DoD inpatient documentation viewable by VA clinicians for shared patients. Develop the capability using Health Level 7 Clinical Document Architecture to extract and share inpatient documentation starting with the discharge summary. The Puget Sound project team established the technical environment for discharge summaries collected from MAMC's Clinical Information System to be viewable to VA providers for shared patients. This capability became operational between MAMC and VAPSHCS in February 2006. This capability will be expanded to additional DoD sites in FY 2007. DoD providers also have access to VA discharge summaries for shared patients.

*LDSI and CCQAS at South Texas VA HCS – Wilford Hall AFMC and Brooke AMC*

This project has two goals:

1. Implement the Laboratory Data Sharing Initiative (LDSI) that facilitates the electronic sharing of chemistry laboratory order entry and results retrieval between South Texas Veterans Health Care System, Wilford Hall Medical Center, and Brooke Army Medical Center (BAMC). The demonstration site is currently performing seven chemistry laboratory tests using LDSI. The demonstration project processed over 1,700 laboratory orders from the VA to BAMC in FY 2006. The project staff is working on mapping and implementing eight additional chemistry tests. The LDSI program will be enhanced by the addition of anatomic pathology and microbiology tests. Planning for implementation of the anatomic pathology and microbiology capability is currently underway with site testing anticipated to begin 2<sup>nd</sup> Quarter FY 2007.
2. Test a credentialing interface between DoD's Centralized Credentials Quality Assurance System (CCQAS) and VA VetPro Credentialing system. The CCQAS and VA VetPro credentialing interface was anticipated to facilitate timely cross-credentialing providers who desired to practice in both VA/DoD health care settings by decreasing the time and resources needed for first time credentialing of a provider if they were already credentialed in the other department. The CCQAS/VetPro joint credentialing interface was a technical success, however; the demand for the system was not as robust as projected. The small number of providers requesting credentialing in both DoD and VA was not sufficient to provide an adequate business case for keeping the credentialing interface operational. The credentialing interface demonstration team is currently documenting lessons learned prior to project closeout.

## **MHS IM/IT Programs**

The initiatives described above demonstrate that DoD and VA are continuously working together to improve information sharing between the two departments. These prototypes and demonstrations, whether local, regional or enterprise level provide opportunities to explore potential sharing improvements with limited disruption. Lessons learned and enterprise-wide changes can then be incorporated into the MHS programs described in this section.

The MHS IM/IT centrally funded program supports the defense health mission by providing Tri-Service information systems and applications used at DoD hospitals and clinics worldwide.

The three types of funding resources used to support the MHS centrally-managed IM/IT program include:

- **Operations & Maintenance (O&M):** Funds the costs of program management, system and infrastructure sustainment, annual software licensing fees, and software and hardware maintenance fees.
- **Procurement:** Funds are used to procure/deploy equipment and Tri-Service standard IT products designed to support and enhance the operations and management of Army, Navy and Air Force MTFs.
- **Research, Development, Testing and Evaluation (RDT&E):** Funds information technology development, test and evaluation efforts.

The key MHS centrally managed IM/IT initiatives are described below. Appendix A contains a listing and short description of centrally managed IM/IT initiatives. All program requirements are validated, priced, prioritized, and approved utilizing the MHS capital investment portfolio process.



*Defense Medical Logistics Standard System (DMLSS)*, co-sponsored by the Assistant Secretary of Defense (Health Affairs) (ASD (HA)) and the Deputy Under Secretary of Defense (Logistics and Materiel Readiness), is a unique partnership engaging the wholesale medical logistics, medical IM/IT, and user communities. DMLSS supports DoD health care providers through rapid acquisition and improved management of supplies and equipment within the MTFs. DMLSS provides IT capabilities that support cataloging, customer logistics, hospital facility operations, property accounting, biomedical equipment maintenance, purchasing and contracting, electronic commerce, quality assurance, and inventory management of wholesale and retail activities. The Joint Medical Asset Repository (JMAR) module provides visibility of all joint medical logistics assets in-storage, on-order, in-transit, or in-theater for both the sustaining base and the deployed, operational environment.

*Executive Information/Decision Support (EI/DS)* provides the information necessary for decision-making. It is comprised of a data warehouse, operational data marts and a suite of decision support tools for management of MHS health care operations. The medical data received, processed, stored, transmitted, and reported by EI/DS is standardized and normalized. With active interfaces to more than 260 sources around the globe, EI/DS consolidates and integrates beneficiary, provider, financial, and healthcare use data from multiple sources internal and external to the MHS to allow users to access data from a corporate perspective in support of their decision processes.

*Military Computer-Based Patient Record (MCPR)* includes: AHLTA, Clinical Information System (CIS), and Composite Health Care System (CHCS): The MCPR supports Force Health Protection (FHP) by developing and deploying an Electronic Health Record (EHR) that will generate, maintain, and provide secure on-line access to a comprehensive and legible health record. The EHR will provide DoD with instant access to a comprehensive, life-long medical record of all illnesses and injuries members suffer, care and inoculations received and exposure to different hazards, anytime and any place needed (from battlefield to sustaining base). Additionally, this initiative includes the CHCS and CIS legacy systems until transition to the centrally managed replacement system, AHLTA.

*Theater Medical Information Program (TMIP)* will provide a seamless, interoperable medical information system to support theater health services, during combat or contingency operations, within and across echelons of care. TMIP will be a federation of information systems that includes theater versions of appropriate sustaining-base systems like AHLTA and DMLSS. The primary goal is to provide global capability linking information databases and integration centers. TMIP's integrated medical information systems ensure precise interoperable support for rapid mobilization, deployment, and sustainment of all theater medical services anywhere, anytime, in support of any mission. TMIP is the medical component of the Global Combat Support System (GCSS). Through TMIP's Medical Surveillance System (MSS) and Joint Medical Workstation (JMeWS), theater commanders will gain situational awareness for critical decision-making. Commanders will be able to track trends, take preventive action, and keep their forces fit through the new ability to collect, analyze, and make use of collective medical information across the military departments throughout the theater in near real time. Commanders will be able to determine the location and health status of injured warfighters across the theater.

*Tri-Service Infrastructure Management Program (TIMPO):* TIMPO manages and sustains the peacetime, capacity-planned, standards-based, Communications and Computing Infrastructure (C&CI), to support approved, MHS centrally-managed, Tri-Service information systems. This includes: 1) a wide area network (WAN) deployed to all TRICARE regions worldwide; 2) local area networks (LAN) providing unified, backbone networks within MTFs worldwide; 3) consolidated management and operations of MHS modules and components in enterprise computing centers; 4) acquisition and sustainment of end user devices (EUDs); and 5) centralized network management, to include capacity planning, configuration management, and network protection. In addition to ongoing efforts to improve C&CI through upgrades to LANs, EUDs and network protection components, the bulk of resources provide life cycle maintenance of existing C&CI to include 24 hours a day/year-round level of support including Tier 1 and 2 modules and C&CI component help desk for MHS users worldwide; network support services to ensure optimum, end-to-end network performance; and hardware/software maintenance and repair, utilizing best business practices to include consolidated contracts, centralized warehousing and use of just-in-time repair.

### **MHS IM/IT Initiative Oversight**

The MHS provides oversight via governance processes that ensure MHS IM/IT initiative investments meet identified mission requirements and goals. These oversight management activities include:

*Portfolio Management:* The MHS program is based upon a mission-driven, Tri-Service/Joint Staff/HA/TMA-approved IM/IT Portfolio that reflects an appropriate balance of Operations & Maintenance (O&M), Procurement, and Research, Development, Test & Evaluation (RDT&E). The MHS IM/IT Program has implemented internal IM/IT management processes that include Tri-Service mission driven requirements prioritization and portfolio management; aggressive management of cost, schedule and performance goals; and the associated management oversight of program

operations in order to achieve performance and life-cycle cost goals. Each program manager, of the various initiatives, follows DoD procedures in the development and management of their programs. Newly identified requirements, prioritized by the functional community, are aligned with the MHS Enterprise Architecture and linked to the overarching Strategic Goals of the MHS. Realistic metrics have been identified within the MHS IM/IT Program to evaluate the progress of each new program, ensuring that outcomes and mission benefits justify the investment.

*Enterprise Architecture:* The MHS has a well-established and documented Enterprise Architecture (EA) that defines our military health information environment. It is fully compliant with the DoD Architecture Framework, and Federal Enterprise Architecture guidance. The MHS EA includes the following four core processes: 1) Providing Access to Care, 2) Performing Population Health Management, 3) Managing Provision of Health Services, and 4) Managing Health Service Performance. The MHS EA facilitates migration to new technology that supports the health care mission by guiding the strategic roadmap towards joint, interoperable, secure and reliable IT solutions both across the Military Health System and with other federal agencies (e.g., the Department of Veteran Affairs). The MHS is fully engaged in the creation of a Federal Health Architecture based on common, commercial standards and practices while still maintaining our mission responsibility to support the health of our warfighters.

*E-Government Activities:* The MHS is actively engaged in advancing the goals of the President's Executive Orders which are to establish an interoperable health record for most Americans within 10 years, promote quality and efficient delivery of health care through the use of health IT, and establish the Office of the National Coordinator as Health Information Technology's Framework for Strategic Action. The MHS is a key participant on the Health Information Technology Standards Panel (HITSP) and American Health Information Community (AHIC) workgroups.

The MHS has an Electronic Health Records (EHR) system for its 9.1 million DoD health care beneficiaries. Because of the tremendous progress the MHS has made advancing health care informatics through large-scale adoption and deployment of EHRs, as well as our success sharing our electronic health information with the VA, the MHS and the VA were invited to work jointly with the Department of Health and Human Services (HHS) through the Office of the National Coordinator (ONC) to actively advance the development, adoption and implementation of health information technology and standards. Based on our sharing initiative experience, the VA and MHS are serving as leaders in shaping national efforts toward increasing electronic health record adoption use nationwide. The MHS is firmly committed to continued collaboration and the appropriate sharing of health information as systems and data repositories mature and standards and processes are further defined and implemented.

### **Defense Business Transformation**

The MHS has taken the necessary steps to comply with Section 2222 of title 10, U.S.C. and the Investment Review Process and Concept for Operations for Investment Review Boards (IRB CONOPS). The Assistant Secretary of Defense (Health Affairs) designated the MHS Chief Information Officer as MHS Portfolio Owner with pre-certification authority (PCA) for Defense Health Program (DHP) funded IT investments on September 21, 2005. Additionally, the MHS has defined, standardized, and communicated its investment review processes that support the MHS Portfolio Owner in his role as a Component PCA. The MHS has a six-stage investment review process that requires approval from the Chief Enterprise Architect, Chief Financial Officer, and Chief Information Officer before an Investment Certification Package (ICP) can be submitted to the Under Secretary of Defense (Personnel & Readiness) Certification Authority and Defense Business Systems Management Committee (DBSMC) for consideration. The MHS process augments Business Mission Area (BMA) guidance by mandating additional enterprise architecture (EA), financial, resource management, and Clinger-Cohen Act compliance products. These products help the MHS Investment Review Committee

(IRC) members engage in an open discussion with the program offices about the proposed investment, identify other interested program offices, negotiate conditional approvals, and initiate transition planning activities. All information regarding the investment review is documented in the PCA letter or other memorandums of agreement. Annual reviews and other meetings serve as checkpoints ensuring that progress is being made toward stated investment goals and/or other agreements. The processes and requirements described above are documented in a MHS Investment Review Guidance Handbook which was distributed to the MHS program offices, military departments and those responsible for evaluating investments in MHS business systems.

### **Summary**

DoD and VA are committed to delivering information technology solutions that significantly improve the secure sharing of appropriate electronic health information. Local and regional initiatives, mandated by the FY 2003 NDAA, serve useful roles in piloting and validating potential enterprise-wide DoD and VA information sharing solutions. Through Portfolio Management, Enterprise Architecture, and Defense Business Transformation processes, the MHS is committed to a strict review and approval process for its information technology systems.

## Acronym List

AFMC.....	Air Force Medical Center
AHIC .....	American Health Information Community
AMC.....	Army Medical Center
ASD (HA).....	Assistant Secretary of Defense (Health Affairs)
BAMC .....	Brooke Army Medical Center
BHIE.....	Bidirectional Health Information Exchange
BMA.....	Business Mission Area
C&CI .....	Communications & Computing Infrastructure
CCQAS.....	Centralized Credentials Quality Assurance System
CDR.....	Clinical Data Repository
CHCS.....	Composite Health Care System
CHDR.....	Clinical Data Repository/Health Data Repository
CIS.....	Clinical Information System
CO/DSCP .....	VA Central Office/Defense Supply Center Philadelphia
CO/TMA .....	VA Central Office/TRICARE Management Activity
CONOPS .....	Concept of Operations
CPR .....	Computer-based Patient Record
DAPA .....	Distribution and Pricing Agreement
DBSMC .....	Defense Business Systems Management Committee
DBSS .....	Defense Blood Standard System
DHP .....	Defense Health Program
DINPACS.....	Digital Imaging Network-Picture Archiving and Communications Systems
DISA.....	Defense Information Systems Agency
DMHRSi.....	Defense Medical Human Resources System-internet
DMLSS.....	Defense Medical Logistics Standard System
DoD .....	Department of Defense

DOEHRS-HC ..... Defense Occupational and Environmental Health Readiness System–  
Hearing Conservation

DOEHRS-IH ..... Defense Occupational and Environmental Health Readiness System–  
Industrial Health

EA..... Enterprise Architecture

EAS-IV..... Expense Assignment System, Version 4

EHR ..... Electronic Health Record

EI/DS ..... Executive Information/Decision Support

EUD..... End User Device

EWS-R..... Enterprise Wide Scheduling and Registration

FHIE ..... Federal Health Information Exchange

FHP..... Force Health Protection

FSS ..... Federal Supply Schedule

FY..... Fiscal Year

GCSS ..... Global Combat Support System

HDR..... Health Data Repository

HEC ..... Health Executive Council

HHS ..... Department of Health and Human Services

HITSP ..... Health Information Technology Standards Panel

IM/IT ..... Information Management/Information Technology

ICP..... Investment Certification Package

IRB ..... Investment Review Board

IRC ..... Investment Review Committee

IT ..... Information Technology

JEHRI ..... Joint Electronic Health Records Interoperability

JIF..... Joint Incentive Fund

JMAR ..... Joint Medical Asset Repository

JMeWS ..... Joint Medical Workstation

LAN..... Local Area Network



LDSI ..... Laboratory Data Sharing Initiative  
 LOINC..... Logical Observation Identifiers Names and Codes  
 MCPR..... Military Computer-Based Patient Record  
 MHS ..... Military Health System  
 MHV..... My HealtheVet  
 MSS ..... Medical Surveillance System  
 MTF..... Military Treatment Facility  
 NIF..... National Item File  
 NMIS ..... Nutrition Management Information System  
 O&M ..... Operations & Maintenance  
 ONC..... Office of the National Coordinator  
 PAS..... Patient Accounting System  
 PCA ..... Pre-Certification Authority  
 PSR..... Patient Safety Reporting  
 NDAA ..... National Defense Authorization Act  
 RBAC ..... Role-Based Access Control  
 RDT&E ..... Research, Development, Testing & Evaluation  
 SNOMED CT..... Systematized Nomenclature of Medicine Clinical Terms  
 SNPMIS..... Special Needs Program Management Information System  
 TIMPO..... Tri-Service Infrastructure Management Program  
 TMIP ..... Theater Medical Information Program  
 TOL ..... TRICARE Online  
 TPOCS..... Third Party Outpatient Collection System  
 TPS ..... Team Puget Sound  
 TRAC2ES..... Transportation Command Regulating and Command & Control  
                   Evacuation System  
 TRANSCOM..... Transportation Command  
 VA ..... Department of Veterans Affairs  
 VistA ..... Veterans Health Information System and Technology Architecture

VSIMS..... Veterinary Service Information Management System

WAN ..... Wide Area Network

WHMC ..... Wilford Hall Medical Center

WMSN..... Workload Management System for Nurses

## Appendix A

AHLTA	<p>AHLTA, (Formally called the Composite Health Care System II), the Military Computer-Based Patient Record (CPR) integrates patient data from different times, providers, and sites of care. AHLTA supports care provided to Service members, retirees and family members. AHLTA is a life-long medical record of all illnesses and injuries of the patient, care and inoculations received, and exposure to different hazards. It provides clinical decision support and rationale for care rendered. AHLTA, for the first time, gives military health care providers, instant access to a continuous and coherent chronology of the health care history of each of their patients. The resulting CPR is available for viewing whenever and wherever needed. This is the target system within the Military CPR (MCPR) initiative.</p>
Centralized Credentials and Quality Assurance System (CCQAS)	<p>CCQAS enables the military medical community to electronically manage the credentials, risk management, and adverse privileging actions of medical personnel and is hosted at a secure Defense Information Systems Agency (DISA) facility. It is deployed worldwide to over 1,350 professional affairs coordinators in 535 locations and contains nearly 60,000 credentials records for active duty, Reserve, Guard, civil service, contractors, and volunteers in the MHS. CCQAS tracks trends in medical malpractice claims in an effort to improve health care quality, ensure legal due process for clinicians undergoing adverse actions, and assist the MTF in meeting Joint Commission on Accreditation of Healthcare Organization's accreditation standards.</p>
Clinical Information System (CIS)	<p>CIS is a commercial system supporting the delivery of inpatient and selected outpatient care at major DoD MTFs. The CIS enables continuous and automated clinical documentation and bedside point-of-care data capture with clinical instruments for multiple patients allowing health care providers to focus on patient care. All clinical documentation is created and stored in the CIS. This clinical data may be aggregated, trended, and analyzed to manage care for a single patient or for an entire patient population. The CIS also provides waveform documentation, graphical trending on patient parameters, a reference library, patient education materials, and various reporting capabilities such as change of shift reports, task lists, and administrative reports.</p>
Composite Health Care System (CHCS)	<p>CHCS is the military's legacy computerized provider order entry system supporting over 700 MTFs worldwide; one of the world's largest standardized health information systems. The MHS has used CHCS for over fifteen years to order/document laboratory tests, radiology exams, perform prescription transactions, document outpatient appointments and other care administered to 9.1 million beneficiaries. CHCS provides essential, automated information support to MHS providers, enabling improved quality of care for beneficiaries; improves patient safety by conducting real-time medication checks to identify potential drug-to-drug or drug allergy interactions before prescriptions are issued; reduces patient wait time, increases patient access to medical resources, and allows faster and more efficient reporting of diagnostic test results. CHCS shares secure, encrypted data electronically with commercial reference laboratories and VA facilities. CHCS is included in the Military Computer-Based Patient Record (MCPR).</p>
Defense Blood Standard System (DBSS)	<p>DBSS is a Food and Drug Administration-regulated class II medical device designed to handle blood collection, processing and tracking procedures, and automation of standards and safeguards of the Military Health System. DBSS supports the Armed Services Blood Program, which represents the Army, Navy, and Air Force, by providing high quality blood products and services to 9.1 million MHS beneficiaries as an element of national policy in peacetime and during deployed operations.</p>
Defense Medical Human Resource System-internet (DMHRSi)	<p>DMHRSi enables the Services to standardize and optimize the management of human resource assets across the MHS. DMHRSi is a Web-based system that enables improved decision making by facilitating the collection and analysis of critical human resource data. It standardizes medical human resource information and provides enterprise-wide visibility for all categories of human resources (active duty, Reserve, Guard, civilian, contractor, and volunteer medical personnel); improves reporting of medical personnel readiness and; streamlines business processes to improve data quality for management decision making and managing the business; provides Tri-Service visibility of associated labor costs and is the source for personnel cost data.</p>

<p>Defense Medical Logistics Standard System (DMLSS)</p>	<p>DMLSS is co-sponsored by the Assistant Secretary of Defense (Health Affairs) (ASD (HA)) and the Deputy Under Secretary of Defense (Logistics and Materiel Readiness), is a unique partnership engaging the wholesale medical logistics, medical IM/IT, and user communities. DMLSS supports DoD health care providers through rapid acquisition and improved management of supplies and equipment within the MTFs. DMLSS provides IT capabilities that support cataloging, customer logistics, hospital facility operations, property accounting, biomedical equipment maintenance, purchasing and contracting, electronic commerce, quality assurance, and inventory management of wholesale and retail activities. The Joint Medical Asset Repository (JMAR) module provides visibility of all joint medical logistics assets in-storage, in-process, and in-transit in both the sustaining base and the deployed, operational environment.</p>
<p>Defense Occupational and Environmental Health Readiness System - Hearing Conservation (DOEHRS-HC)</p>	<p>DOEHRS-HC promotes the quality of life for the military and civilians by providing an effective information solution for the DoD Hearing Conservation Programs. DOEHRS-HC assists DoD in preventing hearing loss by providing for the early detection of noise exposure and personnel auditory readiness. DOEHRS-HC creates high quality data and accurately collects and consolidates the data for effective support of noise exposure surveillance and Force Health Protection. It captures pre- and post-deployment data for all active duty, Reserve, Guard and civilian personnel; supports deployment readiness of DoD personnel; supports noise exposure mitigation through close working relationship with safety and industrial hygiene programs; and centrally consolidates data for analysis and reporting; utilized at all management levels for effective policy decision making. DOEHRS-HC has generated, collected and consolidated approximately 12 million records and is deployed worldwide at 800 Army, Navy, Air Force and non-DoD sites with over 1600 users.</p>
<p>Defense Occupational and Environmental Health Readiness System - Industrial Hygiene (DOEHRS-IH)</p>	<p>DOEHRS-IH is a comprehensive, automated information system that provides a single point for assembling, comparing, using, evaluating, and storing occupational personnel exposure information, workplace environmental monitoring data, personnel protective equipment usage data, observation of work practices data, and employee health hazard educational data. DOEHRS-IH will provide for the definition, collection and analysis platform to generate and maintain a service member's Longitudinal Exposure Record. DOEHRS-IH will describe the IH exposure assessment; identify similar exposure groups, establish a longitudinal exposure record baseline to facilitate post-deployment follow-up, and provide information to enable exposure-based medical surveillance and IH risk reduction.</p>
<p>Enterprise Wide Scheduling and Registration (EWS-R)</p>	<p>EWS-R will provide fully integrated clinical appointing, scheduling, patient registration and operating room scheduling capabilities to the Military Health System. EWS-R will be the source system for the on-line appointing capability through the MHS TRICARE Online (TOL) portal. EWS-R will enhance Access to Care by assuring that the right patient is scheduled with the right provider, at the right place and time, supported by the right staff and equipment.</p>
<p>Executive Information/ Decision Support (EI/DS)</p>	<p>EI/DS provides the information necessary for decision-making. It is comprised of a data warehouse, operational data marts and a suite of decision support tools for management of MHS healthcare operations. The medical data received, processed, stored, transmitted, and reported by EI/DS is standardized and normalized. With active interfaces to more than 260 sources around the globe, EI/DS consolidates and integrates beneficiary, provider, financial, and healthcare use data from multiple sources internal and external to the MHS to allow users to access data from a corporate perspective in support of their decision processes.</p>
<p>Expense Assignment System IV (EAS IV)</p>	<p>EAS IV is a data repository that provides standardized reporting of financial, personnel, and workload data at the MTF/dental treatment facility level. EAS IV is essential for the implementation of viable budgeting and managed care programs within the DoD. EAS IV serves as the primary source of cost data for various studies and for the calculation of rates for third-party collections.</p>

<p>Joint Electronic Health Record Interoperability (JEHRI)</p>	<p>JEHRI is the DoD and the VA joint program to improve sharing of appropriate health information includes: Federal Health Information Exchange (FHIE) which enables the transfer of protected electronic health information from DoD to VA at the time of a service member's separation; Bidirectional Health Information Exchange (BHIE) which enables real-time sharing of allergy, outpatient prescription, demographic data, and laboratory and radiology results between DoD and VA for patients treated in both DoD and VA facilities; Clinical Data Repository (CDR)/Health Data Repository (HDR) (CHDR) which will establish interoperability between DoD's Clinical Data Repository and VA's Health Data Repository; CHDR-BHIE interface to support data sharing from DoD's AHLTA CDR to the VA; Laboratory Data Sharing Initiative (LDSI) which facilitates the electronic sharing of laboratory order entry and results retrieval between DoD, VA and commercial reference laboratories, and Pre- and Post-Deployment Health Assessment Information.</p>
<p>Military Computer-Based Patient Record (MCPR)</p>	<p>MCPR includes: AHLTA, Clinical Information System (CIS), and Composite Health Care System (CHCS): The MCPR supports Force Health Protection (FHP) by developing and deploying an Electronic Health Record (EHR) that will generate, maintain, and provide secure online access to a comprehensive and legible health record. The EHR will provide DoD with instant access to a comprehensive, life-long medical record of all illnesses and injuries members suffer, care and inoculations received and exposure to different hazards, anytime and any place needed (from battlefield to sustaining base). Additionally, this initiative includes the CHCS and CIS legacy systems until transition to the centrally managed replacement system, AHLTA.</p>
<p>Military Health System (MHS) Chief Information Officer (CIO) Management Operations</p>	<p>MHS CIO Management Operations includes the operational requirements for 1) Program Executive Office, Joint Medical Information Systems, 2) portfolio management, 3) Health Information Portability and Accountability Act</p>
<p>Nutrition Management Information System (NMIS)</p>	<p>NMIS supports nutrition management operations at DoD MTFs worldwide. NMIS enables the DoD dietetics community to provide therapeutic medical nutrition therapy and medical food management.</p>
<p>Patient Accounting System (PAS)</p>	<p>PAS is a commercial off the shelf (COTS) application designed to improve data quality, regulatory compliance, and medical claims revenue within the MHS. PAS standardizes coding and compliance and completes billing. PAS consists of two modules to be implemented in phases: Coding Compliance Editor is an interactive tool that provides certified coders the capability to code a record to meet medical and regulatory compliance guidelines, and Charge Master Based Billing is an automated solution for applying encounter and insurance data for billing submissions to third party payers.</p>
<p>Patient Safety Reporting System (PSRS)</p>	<p>PSRS will be a web-based application for event reporting; manager review; automated notification; de-identification; Joint Commission on Accreditation of Healthcare Organizations reporting; event aggregation and reporting to the DoD Patient Safety Center. It will standardize event capture and data management on medical errors and near misses in the MHS.</p>
<p>Special Needs Program Management Information System (SNPMIS)</p>	<p>SNPMIS provides access to and documents services for a comprehensive program of therapy, medical support, and social services for MHS beneficiaries with special needs.</p>

<p>Theater Medical Information Program (TMIP)</p>	<p>TMIP provides seamless, interoperable medical information systems to support theater health services, during combat or contingency operations, within and across echelons of care. TMIP is a federation of information systems. The primary goal is to provide global capability linking information databases and integration centers. TMIP's integrated medical information systems ensure precise, interoperable support for rapid mobilization, deployment, and sustainment of all theater medical services anywhere, anytime, in support of any mission. TMIP is the medical component of the Global Combat Support System (GCSS). Through TMIP's Medical Surveillance System (MSS) and Joint Medical Workstation (JMeWS), Theater commanders will gain situational awareness for critical decision-making. Commanders will be able to track trends, take preventive action, and keep their forces fit through the new ability to collect, analyze, and make use of collective medical information across the military departments throughout the theater in near real time. Commanders will be able to determine the location and health status of injured war fighters across the theater.</p>
<p>Third Party Outpatient Collection System (TPOCS)</p>	<p>TPOCS is the DoD standard system designed to assist in the collection, tracking, and reporting of data necessary for billing commercial health insurance plans, government agencies and patients by the MTF. TPOCS is a system in steady state that will be replaced by the Patient Accounting System.</p>
<p>Transcom (Medical) Regulating and Command &amp; Control Evacuation System (TRANSCOM)</p>	<p>TRANSCOM Regulating And Command &amp; Control Evacuation System (TRAC2ES) is the automated decision support system that functions within a global network to assist in the command and control of joint, combined, and component, inter- and intra-theater patient movement including medical regulating and patient evacuation. Intra-theater medical regulating also focuses on the movement of patients vertically (from Level III to Level IV and higher) and laterally within an Army medical brigade, between the medical brigade, and the subordinate combat support hospitals. TRAC2ES supports the Assistant Secretary of Defense for Health Affairs, the Joint Staff, Combatant Commanders, and USTRANSCOM in peace, war, contingencies, and operations other than war. TRAC2ES has a unique responsibility to provide patient transportation information and in-transit visibility to the defense transportation community and medical support information to the medical community.</p>
<p>TRICARE Online (TOL)</p>	<p>TOL is the MHS Internet point of entry that provides 9.1 million beneficiaries easy access to available healthcare services and information through an enterprise-wide secure portal. TOL provides users with appropriate access to the Service portals, DMHRSi, MHS Learn and DOEHRs-IH. TOL increases beneficiary access to care, optimizes MHS provider resources, supports MHS disease and population management initiatives, and transforms MHS business processes, such as scheduling and appointing by providing the ability to make online appointments with health care providers and order pharmacy refills over a web browser interface. In addition, TOL ensures appropriate privacy policies and mechanisms are in place and provides enterprise security solutions.</p>
<p>Tri-Service Infrastructure Management Program (TIMPO)</p>	<p>TIMPO manages and sustains the peacetime, capacity-planned, standards-based, Communications and Computing Infrastructure (C&amp;CI), to support approved, MHS centrally-managed, Tri-Service information systems including: 1) a wide area network (WAN) deployed to all TRICARE regions worldwide; 2) local area networks (LAN) providing unified, backbone networks within MTFs worldwide; 3) consolidated management and operations of MHS modules and components in enterprise computing centers; 4) acquisition and sustainment of end user devices (EUDs); 5) centralized network management, to include capacity planning, configuration management, and network protection. In addition, EUDs and network protection components, the bulk of resources provide life cycle maintenance of existing C&amp;CI to include 24-hours-a day/year-round level of support including Tier 1 and 2 modules and C&amp;CI component help desk for MHS users worldwide; network support services to ensure optimum, end-to-end network performance; and hardware/software maintenance and repair, utilizing best business practices to include consolidated contracts, centralized warehousing and using just-in-time repair.</p>

<p>Veterinary Service Information Management System (VSIMS)</p>	<p>VSIMS integrates capabilities that support the unique missions performed by the US Army Veterinary Service, as the DoD Executive Agent, to include: food safety/quality assurance, war stopper operational ration surveillance, animal medicine, medical research, and training in peacetime and during mobilization for active duty and reserve units.</p>
<p>Workload Management System for Nurses (WMSN)</p>	<p>WMSN performs patient classification, staffing lookups, workload analysis and acuity updates so that adequate nursing staff can be scheduled to handle patient requirements.</p>