

DEFENSE HEALTH INFORMATION MANAGEMENT SYSTEM





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The Defense Health Information Management System (DHIMS), a component of the Military Health System (MHS) Office of the Chief Information Officer (OCIO) provides a suite of health information solutions that captures, manages and shares health data across the Department of Defense (DoD) enterprise. Built upon the functional, technical and operational perspectives of Theater and clinical medical professionals, DHIMS provides one of the largest – and most comprehensive – electronic health record (EHR) in the world.

BACKGROUND

The Clinical Information Technology Program Office (CITPO) and Theater Medical Information Program – Joint (TMIP-J) merged on June 2, 2008, to form DHIMS.

The new program office eliminates organizational redundancies, streamlines operations and enhances the delivery of much needed information technology solutions to all MHS beneficiaries. The combined programs advance efforts to document seamlessly and electronically the health care provided to all Army, Navy, Air Force and Marine Corps personnel, retirees and their families by military authorized providers. The new organization also more tightly integrates Garrison and Theater versions of AHLTA, the military's EHR. All of the functionality, services and benefits of the merged programs continue in DHIMS, with the added benefits resulting from unified efforts.

DHIMS manages the development, deployment and maintenance of the systems that make up AHLTA. The DHIMS systems support the direct patient-provider relationship, population health, medical surveillance, clinical decision support, and force health protection for deployed Service members.

In addition, DHIMS provides an integrated suite of software to support the military's deployed medical business practice. The Theater Medical Information Program (TMIP) "family of systems" supports complete clinical care documentation, medical supply and equipment tracking, patient movement visibility, and health surveillance in austere communications environments. DHIMS serves as the medical component for the Global Combat Support System (GCSS) and the Global Command and Control System (GCCS). The TMIP "family of systems" is in use by Warfighters and medical practitioners supporting Operation Iraqi Freedom and Operation Enduring Freedom.

DHIMS is committed to delivering clinical IT solutions that enable quality continuity of care and timely administration of benefits. DHIMS' primary focus is on enhancing usability of the military's EHR by improving system speed, reliability, data quality, and usability (look and feel) of the product to better meet the needs of the military's medical community.

DHIMS mission is to provide a world-class health information management system that seamlessly captures, manages and shares health information in support of the military's electronic health record for our Service members, their families, Combatant Commands and the user community.

DHIMS SYSTEMS AND PROGRAMS

Garrison Systems

- AHLTA
- Legacy Composite Health Care System (CHCS)
- Federal Health Information Exchange (FHIE)
- Pre- and Post-Deployment Health Assessment Forms Sharing (PPDHA)
- Bidirectional Health Information Exchange (BHIE)
- MHS Inpatient Solution
- Clinical Data Repository/Health Data Repository (CHDR)
- Laboratory Data Sharing Initiative (LDSI)

Theater Systems

- AHLTA-Mobile
- AHLTA-Theater
- DoD Occupational and Environmental Health Readiness System – Industrial Hygiene (DOEHRHS-IH)
- TMIP Composite Health Care System Caché (TC2)
- SNAP Automated Medical System (SAMS)
- Theater Medical Data Store (TMDS)
- Joint Medical Workstation (JMeWS)
- Joint Medical Analysis Tool (JMAT)
- DMLSS Customer Assistance Module (DCAM)
- Patient Movement Items Tracking System (PMITS) PlexusD
- U.S. Transportation Command Regulating and Command & Control Evacuation System (TRAC2ES) Interface with TMDS
- Expeditionary Framework (EF)
- Medical Situational Awareness in the Theater (MSAT)

GARRISON SYSTEMS DESCRIPTIONS

AHLTA 3.3

AHLTA 3.3 is an enterprise-wide medical and dental clinical information system that provides secure online access to longitudinal health records. AHLTA enables MHS providers to document the patient's health information and history, which are consolidated in a single clinical database known as the Clinical Data Repository (CDR) and are made accessible to authorized users worldwide, 24 hours a day. The CDR facilitates trend analysis activities and medical surveillance at the patient or population level. Providers can access executive-level reports on common diagnoses and procedures to identify trends of concern. AHLTA also incorporates all Computer-based Provider Order Entry (CPOE) capabilities with a user-friendly interface to improve coding practices and expand the documentation of medical care. Additionally, Healthcare Artifact and Image Management Solution (HAIMS) will provide an Enterprise Content Management capability for managing non-computable parts of the medical record, such as EKGs, consent forms and discharge summaries.

AHLTA 3.3 has been pre-certified by the Certification Commission for Healthcare Information Technology (CCHIT).

AHLTA 3.3 Capabilities

- Encounter Documentation and Coding
- Problem List Generation
- Order Entry
- Results Retrieval
- Consult Tracking
- Allergies Warning
- Medical Alerts
- Immunization Documentation
- Wellness Reminders
- Self-Reporting Tools

Legacy Composite Health Care System (CHCS)

Legacy CHCS, the backbone of AHLTA, enables DoD providers to electronically perform patient appointment processes and scheduling, order laboratory tests, retrieve test results, authorize radiology procedures and prescribe medications within AHLTA. CHCS continues to be one of the most broadly used CPOE systems in the nation, and it also supports multiple healthcare administration activities, including patient administration, medical service accounting, medical billing and workload assignments.

CHCS modules provide automated features and capabilities in support of the following:



- Patient Administration
- Patient Appointments and Scheduling
- Managed Care Program
- Quality Assurance
- Dietetics
- Laboratory
- Radiology
- Pharmacy
- Workload Accounting Module
- Medical Services Accounting
- Ambulatory Data Module
- Medical Records Tracking
- Database Administration
- Order Entry/Results Retrieval

CHCS interfaces with 60 other clinical and administrative systems, including:

- VA Consolidated Mail Outpatient Pharmacy (VA CMOP)
- TRICARE Online (TOL)
- Pharmacy Data Transaction Service (PDS)
- Defense Medical Logistics Standard Support (DMLSS)
- Third-Party Outpatient Collection System (TPOCS)
- Defense Blood Standard System (DBSS)
- Defense Enrollment Eligibility Reporting System (DEERS)



DOD/VA INFORMATION MANAGEMENT/INFORMATION TECHNOLOGY (IM/IT) SHARING

In the last decade, DoD and the Department of Veterans Affairs (VA) have made significant strides in their efforts to enhance clinical data exchange and interoperability between the agencies. Today, DoD and VA are leading the nation in exchanging healthcare information, which provides greater continuity of care and more complete and accurate health records for Service members and Veterans.

Federal Health Information Exchange (FHIE)

FHIE enables the transfer of electronic health information to the VA at the time of a Service member's separation. DoD transmits data to VA on a monthly basis: inpatient and outpatient laboratory and radiology results, outpatient pharmacy data, allergy information, discharge summaries, consult reports and demographic data. VA providers and benefits specialists access this data daily for use in the delivery of healthcare and claims adjudication. From 2002 to Oct 2008, DoD has transmitted over 231M clinical messages on more than 4.5M Veterans to the FHIE data repository.

Pre- and Post-Deployment Health Assessment Forms Sharing (PPDHA)

DoD sends electronic PPDHA and Post-Deployment Health Reassessment (PDHRA) data to the VA monthly for separated Service members, National Guard, and Reserve members who have been deployed and are now demobilized. In addition, DoD sends VA weekly data pulls of PDHRAs for individuals referred to the VA for care or evaluation. As of October 2008, the number of PPDHA and PDHRA forms grew to more than 2.4M on more than 972,000 individuals.

Bidirectional Health Information Exchange (BHIE)

BHIE allows DoD and VA providers to view clinical information in real-time for patients who receive care in either agency health system. BHIE enables the bidirectional sharing of allergy information; outpatient pharmacy data; demographic data; inpatient and outpatient laboratory and radiology results; Theater clinical data (including inpatient notes, outpatient encounters, and ancillary clinical data, such as pharmacy data, allergies, laboratory results, and radiology reports)

and vital signs. Access to BHIE data is available through AHLTA, the military's EHR, and through VistA, VA's EHR, for patients treated by both departments.

MHS Inpatient Solution

The MHS Inpatient Solution for AHLTA, with emergency department capabilities, eliminates the majority of paper-based inpatient documentation at approximately 21 DoD Military Treatment Facilities, which accounts for 52% of the DoD inpatient beds. Additionally, the use of the MHS Inpatient Solution allows for standardization of processes and sharing of documentation across DoD and VA treatment facilities. To increase the availability of clinical information on a shared patient population, DoD and VA collaborated to enable bidirectional access to inpatient documentation from MHS Inpatient Solution through BHIE.

Clinical Data Repository/Health Data Repository (CHDR)

CHDR establishes interoperability between DoD's Clinical Data Repository and VA's Health Data Repository by incorporating the exchange of standardized data into each agency's EHR. This integrates outpatient pharmacy and medication allergy data for shared patients. Exchanging standardized pharmacy and allergy data supports the ability to conduct drug-drug and drug-allergy interaction checking using data from both DoD and VA. As of October 2008, computable pharmacy and medication allergy data is being exchanged on over 21,140 patients who receive healthcare from both systems.

Laboratory Data Sharing Initiative (LDSI):

LDSI facilitates the electronic sharing of laboratory orders and results between DoD, VA, and/or commercial reference laboratories. LDSI is available for use throughout DoD and VA where a business case exists. LDSI is actively being used on a daily basis between DoD and VA at several sites where one facility uses the other as a reference lab. Either Department may function as the reference lab for the other with electronic order entry and results retrieval. Additionally, LDSI enhances patient safety by eliminating potential clerical errors resulting from manual transcription of orders and results from paper into the computer system.

THEATER SYSTEMS DESCRIPTIONS



AHLTA-Mobile

AHLTA-Mobile is the first responder's handheld data capture device. AHLTA-Mobile allows for immediate documentation of injury, illness and care, and stores medical data until it is transferred to AHLTA-Theater. AHLTA-Mobile can electronically store medical reference documents and replaces pounds of books and paper previously carried by medics.

AHLTA-Theater

AHLTA-Theater extends the sustaining-base electronic medical record (AHLTA) capability, look and feel to the Theater of operation. AHLTA-Theater enables healthcare providers to document care, order laboratory services such as blood work, x-rays and medications, and store medical data until communications are available to send the data to the Theater Medical Data Store and Clinical Data Repository.



DOD Occupational and Environmental Health Readiness System - Industrial Hygiene (DOEHRS-IH)

DOEHRS-IH supports the reduction of worksite hazards and supports the tracking of long-term environmental exposure. DOEHRS-IH provides analytical support for documenting occupational hazards by capturing analysis results of air, water and soil samples.

TMIP Composite Health Care System Caché (TC2)

TC2 provides documentation for inpatient healthcare, ancillary services order-entry, and result-reporting in the deployed environment. TC2 provides inpatient management, laboratory, radiology, and pharmacy ordering capabilities, and enables users to schedule outpatient clinic and radiology procedures.

SNAP Automated Medical System (SAMS)

SAMS is a Navy-specific shipboard legacy healthcare information system phasing out as similar TMIP capabilities emerge. Key capabilities include: electronically documents care; documents and records environmental and occupational exposures; manages medical materiel; and records and tracks medical readiness.

Theater Medical Data Store (TMDS)

Information from the Theater medical systems are transferred to the TMDS which serves as the authoritative Theater database for collecting, distributing and viewing Service members' pertinent medical information. TMDS updates the AHLTA CDR, where all Service members' EHRs reside. This information is also made available to the VA through the bidirectional interface, BHIE. TMDS integrates the Joint Patient Tracking Application functionality to view, track and manage ill or injured patients as they move through the theater levels of care, sustaining-base Military Treatment Facilities and those facilities shared with the VA.

Joint Medical Workstation (JMeWS)

JMeWS provides medical situational awareness, medical surveillance, and force health decision support. It also reports on medical trends and analyzes the overall status of theater health. JMeWS provides the ability to drill down to specific medical units and individual encounters. It also shares medical intelligence with GCSS and GCCS, serving as the medical component to the Combatant and Joint Task Force Commander's common operating picture.

Joint Medical Analysis Tool (JMAT)

JMAT is a Joint-Staff-approved automated application that provides joint medical planners and decision makers with a tool that supports crisis action planning. The tool assists the calculation and generation of theater medical requirements, scenario development to support course-of-action analysis, and risk assessment to plan the allocation of critical medical resources.

DMLSS Customer Assistance Module (DCAM)

DCAM is a medical logistics ordering tool that allows operational units to monitor medical supplies and replenish levels when required. It automates the medical materiel supply process at lower levels of care and allows non-logisticians to view electronically and order from their supplier's catalog.



Patient Movement Items Tracking System (PMITS) PlexusD

PMITS PlexusD tracks the storage of PMI during peacetime and its movement during contingency and wartime operations. PMITS PlexusD directly supports the Warfighters' mission by ensuring critical patient movement equipment is available to save critically injured Warfighters' lives. Commanders use PMITS PlexusD to manage and redistribute PMI assets to avoid shortages during patient evacuations.

U.S. Transportation Command Regulating and Command & Control Aero-medical Evacuation System (TRAC2ES) Interface with TMDS

TRAC2ES monitors and tracks patients leaving theater via Air Force aero-medical evacuation. The system provides visibility of the logistics of incoming and outgoing flights and enables scheduling of patients' departures. TRAC2ES interfaces with TMDS, receiving pertinent health care information from the electronic medical record and sending information to enable patient movement visibility.

Expeditionary Framework (EF)

EF provides a messaging service to DHIMS applications allowing electronic health records and other medical information to be transmitted from the theater to CONUS repositories, such as JMeWS and TMDS. The EF is designed to work in environments with low or interrupted communications, thereby guaranteeing critical medical data is available to healthcare providers and decision makers.

Medical Situational Awareness in the Theater (MSAT)

MSAT is an advanced concept technology demonstration that combines information from multiple communities to provide a common operating picture and decision support for the Combatant and Joint Task for Commanders Surgeon staffs. MSAT leverages Service Oriented Architecture combining medical, patient tracking, mapping, logistics, personnel, weather, and intelligence information to support current and planned operations decision making. The MSAT standards based information sharing approach enables rapid connection to current and emerging information sets reducing integration costs while adding increased value over time.



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