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Contextual History and Visual Timeline of AHLTA and VISTA/CPRS Products

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1. AHLTA

The development of computer-based patient record systems became crucial and set as priority in the U.S. healthcare systems when President Lyndon Johnson signed the Social Security Amendments Act, known as the Medicare Act in 1965.

Since 1968, the Department of Defense (DOD) has pursued the goal of providing computer support to its hospitals and clinic. During fiscal years to 1976 to 1984, DOD spent about $222 million to acquire, implement, and operate various health-care computer systems.

1.1 CHCS I

The Composite Health Care System I (CHCS I) was deployed to over 500 DOD medical facilities worldwide, interfaced with more than 40 other clinical and administrative systems, documented over 50 million outpatient appointments, and performed 70 million prescription transactions yearly. DOD recognizes the value of secure and on-demand accessible computerized patient information as a substantive way to greatly enhance patient safety as well as the quality of health care delivery. CHCS I reduced patient wait time, increases patient access to medical resources, and allowed faster and more efficient reporting of diagnostic test results. CHCS I permited health care providers to issue clear orders efficiently and effectively and enhanced patients' safety through CPOE. CHCS I had made the quantum leap from paper to electronic order entry. It enabled DOD providers to electronically order laboratory tests, retrieve test results, authorize radiology procedures, prescribe medications, and schedule appointments.[1]

HISTORY

The development of CHCS began in 1988, when Science Applications International Corporation (SAIC) won a competition for the original $1.01 billion contract to design, develop, and implement the system. (See page 18, Table Timeline 1) The Military Health System deployed a MUMPS-based computerized physician order entry (CPOE) results retrieval system for pharmacy, laboratory and radiology. CHCS was first deployed in 1993, and used by all United States and OCONUS military health care centers.

In 1996 SAIC delivered CHCS on schedule, on cost, and with quantified benefits. CHCS was hosted at 104 treatment sites and was fully deployed to over 500 facilities worldwide. The system served military hospitals and clinics and offered the benefits of electronic health records. As a result, CHCS became an important part of Defense's inpatient and outpatient medical operations. From the time a patient is admitted into a medical facility to the time of discharge, CHCS records information on the patient's condition and treatment and makes it available to physicians, nurses, and technicians.

Shared capabilities and modules of the CHCS include: 1) order entry/results retrieval, 2) electronic mail, 3) patient administration, 4) patient appointment and scheduling (including Managed Care Program submodule), 5) quality assurance, 6) laboratory, 7) dietetics, 8) pharmacy, 9) clinical, 10) radiology, and 11) records and image files tracking.

It employed 73,000 workstations and laptops, along with 16,000 printers, and was used by tens of thousands of personnel 24/7/365.

However, CHCS by itself could not provide for complete outpatient or inpatient documentation to support a life-long patient EHR. CHCS supported functions only at a single host site, maintaining information for patient-provider encounters that have occurred at that site.

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GUI

The original CHCS graphic user interface (GUI) was a text based Bulletin Board System/ANSI like display accessed via DEC VT320 terminal emulation. Users interact with a computer operating system or software by typing commands to perform specific tasks. This contrasts with the use of a mouse pointer with a GUI to click on options, or menus on a text user interface (TUI) to select options. In CHCS, menu options are listed as both abbreviations and

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phrases. For example, "CLN Clinical System Menu" and "PHR Pharmacy System Menu." User could select menus using curser, and identify the position in the screen with highlight. Text based display is useful when a large vocabulary of commands or queries, coupled with a wide (or arbitrary) range of options, can be entered more rapidly as text than with a pure GUI. For the text monospaced Terminal bitmap font was used in white on black background.

In terms of feedback/alert system, when certain data type or menu option is not available, the screen gives a user warning. It appears next to a menu option. For example, "WAM Workload Assignment Module Menu (Not Available)."

According to Government , the "inpatient order-entry capability in CHCS was not considered user-friendly by many physicians because entering conditional and complex orders into CHCS took much more time than writing out the orders by hand. As a result, many physicians resisted using the inpatient order-entry features of CHCS, electing to write out their orders by hand and to have other staff enter them into the system."

1.2 AHLTA / CHCS II

The DOD is currently in the process of fielding CHCS II. CHCS II is a windows-based application that further enhances CHCS capabilities and provides a user-friendly interface with improved coding and expanded documentation of medical care. It is an enterprise-wide medical clinical information system that maintains and provides worldwide secure online access to comprehensive patient records, continuing the Department's military EMR effort. With this system, doctors and other medical workers can create and add to electronic medical records for the individuals they treat. CHCS II is secure, standards based, and patient centric, for use in our garrison based medical facilities to our forward deployed medical units. CHCS II is a core component of military medical readiness, supporting uniform, secure, high-quality health care delivery and continuity of care to Military Health System beneficiaries. By streamlining and computerizing business processes and scheduling systems, CHCS II stresses a team-based approach to health care and will improve hospitals and clinics' efficiency in providing timely service to patients. Additionally, efficient, secure, and readily accessible communication among providers improves the continuity of care and increases patient safety and the timeliness of diagnoses and treatments. CHCS II meets the eight care delivery functions identified by the Institute of Medicine as essential for electronic health records to enhance safety, quality and efficiency of health care delivery. It centrally stores all electronic patient medical records in the Clinical Data Repository (CDR). CHCS II has received approval for full rate production and began worldwide deployment in January 2004.[2]

In 1996 DOD began developing CHCS II to replace CHCS. It was first deployed to a military MTF in May 2003 when the Army and the Air Force brought their first two major medical facilities online.

CHCS II was renamed Armed Forces Health Longitudinal Technology Application (AHLTA) in 2005. AHLTA was introduced to address the limitations of the old CHCS MUMPS-based system, which had over 100 regional and local servers that did not communicate with each other, and had little to no interaction between the various services.

AHLTA builds on capabilities of existing systems, phasing in their functions over time, while adding new capabilities to met mission requirements. AHLTA initially provides support capabilities in the outpatient arena, while the mature system will extend those capabilities into the inpatient arena. The ultimate goal is to integrate all legacy CHCS clinical functions, as well as the functions of other clinical applications, into AHLTA. The system has incorporated many commercial off-the-shelf EMR software features, such as the MEDCIN clinical database and commercially available ICD-9 coding functions.

DOD had deployed AHLTA to 118 of 138 planned Military Treatment Facilities. DOD employed BEA Tuxedo, Sun (SeeBeyond) eGate, ESI and M/Objects, and Proxicom Daou Systems Enosus to synchronize applications and data in the 104 CHCS legacy host sites with the AHLTA clinical data repository (CDR), using HL7 messaging. Synchronization is accomplished in a manner that provides semantic interoperability, and ensures continuous high availability and reliability. DOD undertook a significant mapping effort to ensure that the many different medical terms in the 104 CHCS host sites are completely computer-processable in the AHLTA CDR, and that this data is maintained in near real time.

DOD planed to wrap the CHCS Massachusetts General Hospital Utility Multi-Programming System (MUMPS) code in InterSystems Caché, which combines objects and SQL, eliminates object-relational mapping, and enables rapid Web application development, excellent transaction processing speed, scalability and real-time queries against the transaction database.

AHLTA is being deployed in a phased approach, using blocks of functionality. When complete, AHLTA will provide a comprehensive longitudinal health record for 9.2 million DOD beneficiaries it will directly support DOD Access to Care, Population Health and Force Health Protection objectives.

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CHALLENGES

When the 104 CHCS sites were initially established, there were no standards established for medical terminology, and no controlled medical vocabulary (CMV). For example, the following constructs were present in the 104 CHCS host sites.

Establishing the CDR was the key to providing semantic interoperability, where information exchange was completely computer-processed. While standard HL7 2.4 messaging can handle the conversion of various files from one structural format to another, more sophisticated techniques are required to ensure that terms mapped from one system mean the same in the other system. The CDR and CMV, provided by the 3M Care Innovations Suite, include the 3M Health Data Dictionary (HDD), which works in conjunction with the MEDCIN terminology engine to provide semantic interoperability. AHLTA automates evaluation and management coding for injuries, conditions and diseases, using ICD-9 and CPT-4 codes.

It was understood that CDR had to permanently store data from many sources, be able to handle data in many formats (images, text, XML), and enable finely structured, explicitly coded data to support bio-surveillance efforts and cross-patient analysis of data for patient safety, quality and research purposes.

DOD populated the CDR initially with 25 months of historical normalized lab, pharmacy and radiology data for each patient, which was transmitted from each CHCS host site. This data is now synchronized with the CDR in near real time through distributed transaction processing technologies and interface engines such as Sun (SeeBeyond) eGate, BEA Tuxedo, and development methodologies employing M/Objects, ESI Objects and Proxicom Daou Systems Enosus.

A Terminology Service Bureau added SNOMED coding and Problem Knowledge Coupler, Inc., terms to further enhance semantic interoperability. The ultimate goal was to create a CDR and CMV that were compliant with the HL7 3.0 Reference Information Model.

FISCAL AND TECHNICAL CONSTRAINTS

AHLTA has been built using incremental development and delivery of blocks of functionality based on service operational priorities, and funding available through the Program Objective Memorandum budget process.

Because of the size of this project, a phased approach was required, as all funding was not available immediately. The 1996 decision to interface CHCS with AHLTA was also supported by the unavailability of a commercial off-the-shelf EHR technology that could support the military's functional capabilities, scalability requirements and three-tiered technical architecture. In addition, DOD knew that the CDR was the foundation for providing all of the components of an EHR: clinical documentation and display, workflow and decision support.

AHLTA BLOCKS

AHLTA Block I deployment began January 1, 2004. The system permit clinicians to enter outpatient clinical encounter documentation via clinical workstation at the point of care, using a common presentation layer across the enterprise.

The interface was engineered using Visual Basic, and was based on the Microsoft Style Guide. The interface looked similar to Microsoft Outlook, providing clinicians with a picture of scheduled patients for their workday and actions required. Clinicians could prepare an electronic "SOAP note" using the MEDCIN terminology engine. Block I also provided automated clinical practice guidelines, and a complete set of alerts for medical complications and preventive health care promotion. Block I deployment was completed December 1st, 2006.

Block II began June 1, 2005, and will add 6,371 users, and will provide optical order entry for the production of military spectacles at military fabrication laboratories, and an electronic dental charting application. Subsequent releases may add up to 21,575 users, provide inpatient and emergency services, and expand laboratory, pharmacy and radiology capabilities. Block II is scheduled to be completed January 1, 2010.

Deployment of Block III began in January 1, 2007. Block III includes enhancements to AHLTA by replacing legacy functionality including the pharmacy, laboratory and anatomic pathology, radiology, inpatient charting and documentation, occupational health and surveillance modules. Block III is scheduled to be completed September 1, 2011.

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GUI

In 1996, as part of the Clinical Integrated Workstation, Defense began building a prototype GUI to improve order-entry capability of CHCS. The goal of this prototype is to enable physicians to access computer screens or windows containing icons that represent activities such as ordering or modifying patients' prescriptions, and ordering inpatient laboratory tests.

The goal of CHCS II GUI was to allow physicians to look up inpatient data, review inpatient laboratory test results, and perform many other tasks by clicking on a few icons and selecting items from a few menus. The goal was to enable physicians to use CHCS more efficiently; thereby reducing the possibility of errors in the system due to data-entry mistakes and reducing costs associated with having other staff enter physicians' orders.

CHCS II incorporates information that used to be recorded on paper charts, primarily notes by doctors and nurses. CHCS II incorporates those documents into the patient's electronic health record. Clinicians can use existing templates to make notes and track treatments on a variety of illnesses or conditions, or they can create their own forms. (Bob Brewin)

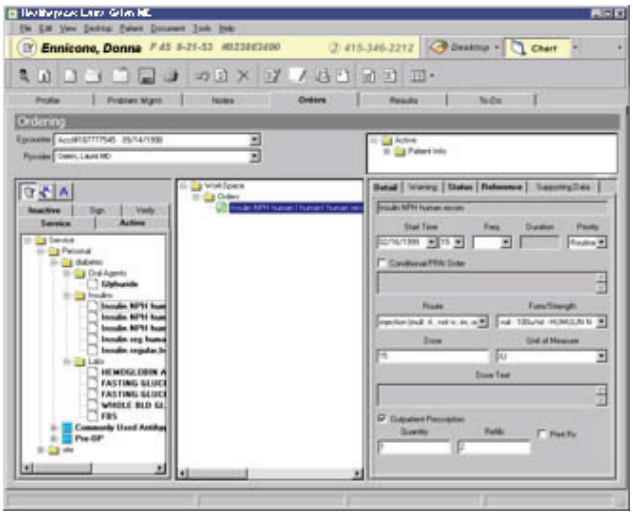
AHLTA version 1.1 was released in January 2006. To the right is a screenshot of AHLTA version 3.3. As of today the latest version of AHLTA is version 3.3. The unique features in this edition include:

1. PERFORMANCE

- Patient specific modules will be saved and closed when a patient is changed.
- Noticeable improvements in the performance and speed of AHLTA.

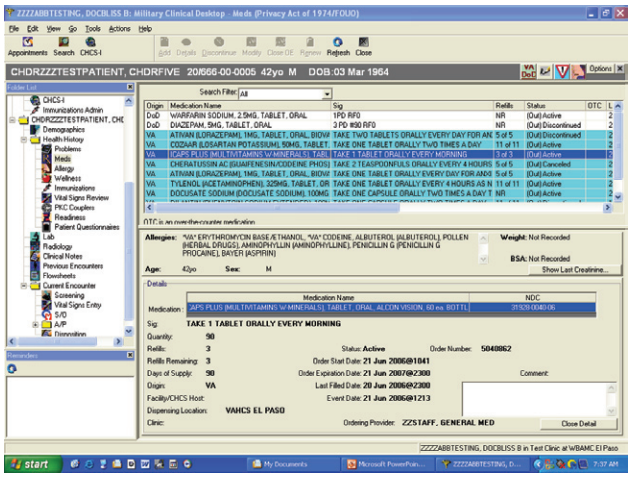
2. NEW MODULES

- Drawing tool
- Tasking Module
- OB Summary
- Registries
- CHDR BHIE
- SRTS II



MC4, WWW.MC4.ARMY.MIL

Screen of the CHCS II interface



MC4, WWW.MC4.ARMY.MIL

Screen of the AHLTA 3.3 interface

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3. REDESIGNED MODULES

- Review New Results Redesign
- Notifications (Alert Review)
- Health History Panel
- Telephone Consults
- Template Management
- Pediatric Growth Charts (Vitals)
- Discontinued Meds (Medications)
- Electronic Patient Signature (Clinical Notes, Add Note)
- PKC Couplers
- Problems
- Vital Signs
- Disposition

4. WORKFLOW

- Unassigned Provider
- Printing Multiple Encounters
- Sensitive Encounter Printing
- Signing/Cosigning Multiple Encounters
- Designation and Selection of Co-Signers
- New Steps to Edit an S/O Note
- Patient Labels
- Selection of Radiology Location
- S/O Enhancements
- A/P Enhancements
- APV Enhancement
- E&M Coding
- Future Appointments

5. SECURITY AND ACCESS

- Security Matrix Redesign
- User Multi-Site Access

6. MISCELLANEOUS

- TMIP to CDR
- Medical Affirmative Claims
- HIPPA Taxonomy

LEGIBILITY

The CHCSII/AHLTA GUI annotates common PC environment, such as having menu bar on top, icons for different functions, tree diagram for categorizing information. The layout is two-column grid with menu bar on top; the left column displays menu/module options. Colorful icons are displayed next to menu options. The right portion of the window is where data is displayed. User can have multiple tabs and switch the display by clicking tables.

The menus include administrative information such as appointments, notifications, and telephone consults, patient list, sign orders, and new results.

There is Patient data option. Patient data is divided to two categories, Health History and Current Encounter. The former category includes problems, medications, allergy, wellness, immunizations, vital signs review, PKC couplers, readiness, patient questionnaires, and army readiness. The latter includes screening, vital signs entry, S/O, drawing, A/P, disposition, and so forth.

Also a user can click BHIE Data Viewer from the Folder List to launch the BHIE Data Viewer module. This will allow a user to retrieve data from Veterans Health, SHARE Health and Theater Health. Information that has been marked as sensitive by the VA will not be displayed. (In VistA, click the Remote Data button to launch the Remote Data Viewer.)

FORMAL ASPECTS

Sans-serif font with variations in weight, such as regular and bold. Clickable text or links are indicated by underlines. The base color is white, white and green. Most of the text is displayed in black. Various colors are used for icons.

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UNIQUE CAPABILITIES

The drawing tool enables users to indicate a condition graphically rather than describing the location and condition textually. AHLTA utilized the Third Party Commercial off-the-Shelf (COTS) Pegasus software.

The new tasking module allow users to: 1) create, assign and track tasks that are neither patient nor encounter specific; 2) select main module or Forward Task icon in the Encounter Summary and Telcon summary modules; and 3) filter the tasking summary data by Assignees, Active date, Priority and Status. Completed Tasks are removed from the Task List and the CDR (default time for deletion is seven days).

With the CHDR-BHIE module, a user can view the following data types:

- Allergy information
- Outpatient medication (med) results
- Chemistry laboratory (lab)/hematology lab
- Radiology (rad) results
- Microbiology lab data

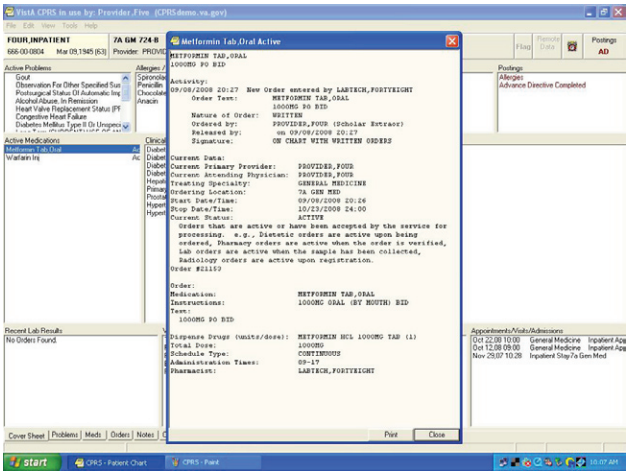
2.1 VISTA/CPRS

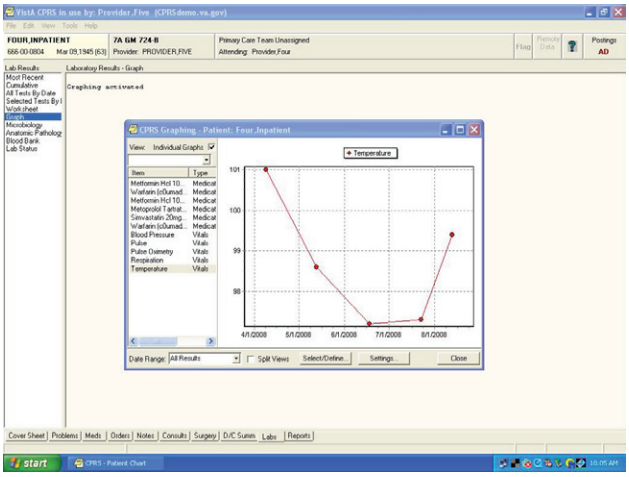
The Department of Veterans Affairs (VA) has had automated information systems in its medical facilities since 1985, beginning with the Decentralized Hospital Computer Program information system (DHCP), including extensive clinical and administrative capabilities.

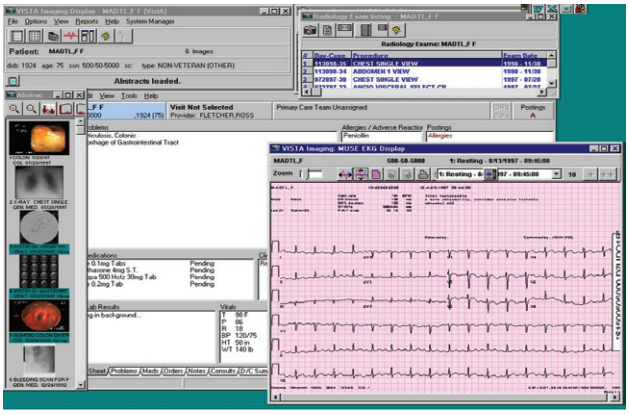
In 1995, DHCP was enshrined as a recipient of the Computerworld Smithsonian Award for best use of Information Technology in Medicine. VistA supports both ambulatory and inpatient care, and includes several significant enhancements to the original DHCP system.

In 1996, the Chief Information Office introduced the Veterans Health Information Systems and Technology Architecture (VistA). It connects VHA facilities' workstations and PCs with nationally mandated and locally adapted software applications that are accessed by end users through a graphical user interface known as the Computerized Patient Record System (CPRS). CPRS was introduced in 1997.

VistA is an enterprise-wide information system built around an electronic health record, used throughout the U.S. Department of Veterans Affairs medical system, known as the Veterans Health Administration (VHA). By 2001, the VHA was the largest single medical system in







Screens of the VistA interface

SCREENSHOTS OF VISTA DEMO TAKEN BY THE AUTHOR, OCTOBER 2008

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the United States, providing care to four million veterans, employing 180,000 medical personnel and operating 163 hospitals, over 800 clinics and 135 nursing homes. By providing electronic health records capability, VistA is thereby one of the most widely used EHRS in the world.

Before CPRS, VistA was what is known as "roll and scroll" or a terminal application. VistA was was designed long before monitors where capable of complex graphics displays, and much of VistA is only available on terminals.

CPRS is a GUI client written in Borland's Delphi (Pascal) that uses VistA-RPC calls to connect to VistA. It provides a single interface for health care providers to review and update a patient's medical record and to place orders, including medications, special procedures, x-rays, patient care nursing orders, diets, and laboratory tests. CPRS is flexible enough to be implemented in a wide variety of settings for a broad spectrum of health care workers and provides a consistent, event-driven, Windows-style interface.

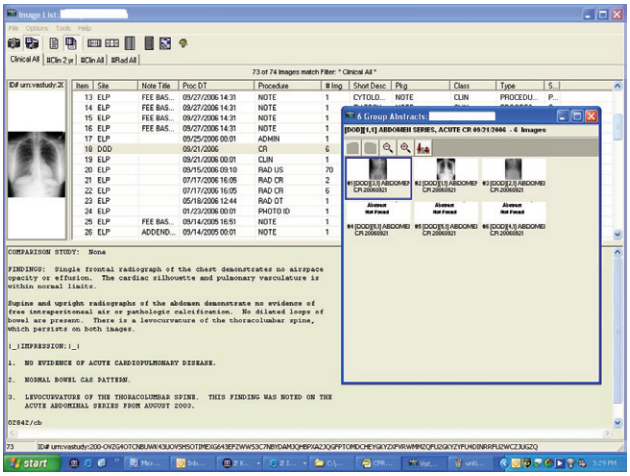
CPRS organizes and presents timely, patient-centric information, such active problems, allergies, current medications, recent laboratory results, vital signs, hospitalization, and outpatient clinic history. The information is displayed immediately when a patient is selected and provides an accurate overview of the patient's current status before clinical interventions are ordered.

The CPRS capabilities include:

- A Real-Time Order Checking System that alerts clinicians during the ordering session that a possible problem could exist if the order is processed;
- A Notification System that immediately alerts clinicians about clinically significant events;
- A Patient Posting System, displayed on every CPRS screen that alerts clinicians to issues related specifically to the patient, including crisis notes, warning, adverse reactions, and advance directives;
- The Clinical Reminder System that allows caregivers to track and improve preventive health care for patients and ensure timely clinical interventions are initiated.
- Remote Data View functionality that allows clinicians to view a patient's medical history from other VA facilities to ensure the clinician has access to all clinically relevant data available at VA facilities.
- CPRS uses a client-server interface for health care providers to review and update a patient's electronic medical record.
- Ability to place orders, including medications, special procedures, x-rays, patient care nursing orders, diets, and laboratory tests.
- Provides a consistent, event-driven, Windows-style interface.

In 2007 a set of protocols was developed and used by the VHA to transfer data (from VistA) between hospitals and clinics within the pilot project. This is the first effort to view a single patient record so that VistA becomes truly interoperable among the 128 sites running VistA today.

The VHA has an ongoing pilot project, HealtheVet (HeV) that envisions the next generation of VistA, with further modernization of database capabilities and interfaces. MyHealthVet will allow veterans to access, and create a copy of their health records online. MyHealthVet allows veterans to create a Personal Health Record (PHR) so they can transfer them to institutions outside the VA health system or keep a personal copy of their health records.



HTTP://WIKI.LAPTOP.ORG/GO/VISTA_IMAGING_ARCHIVE

2.2 VISTA IMAGING

In 2005 VA introduced VistA Imaging. The VistA Imaging system integrates clinical images, scanned documents, and other non-textual data into the patient's electronic medical record.

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VistA Imaging can capture and manage many different kinds of images including:

- Clinical images such as those from endoscopy, pathology, dermatology, and cardiology
- Radiology and nuclear medicine images
- Scanned clinical and administrative documents
- EKG waveforms

Captured images are combined with text data to facilitate a clinician's task of correlating information and making timely and accurate patient care decisions.The VistA Imaging System's primary functions are: 1) display of clinical images, 2) capturing images, 3) diagnostic display, and 4) image management.VistA Imaging provides the multimedia component of CPRS, and completes the online CPRS chart by providing ready access to medical images and scanned documents such as signed consent forms, advance directives, and drawings.

A patient's photo identification, EKGs, and a menu of thumbnail images are automatically displayed when a patient is selected in CPRS. Images are associated with progress notes and reports of radiology exams, clinical procedures, surgical operations, and pathology specimens. When an image is present, an image icon will appear to the left of the note title or report in CPRS. When the user clicks on the note or report, the associated images will be displayed for user selection and viewing.

In addition to providing access to local images, Imaging's Remote Image Views feature can automatically locate and allow clinicians to display images stored at any other VA facility in the nation, providing an integrated view of image studies to the clinician.

Facilities can also implement the VistA Imaging TeleReader for diabetic retinopathy screening. This feature allows retinopathy screening images acquired at one facility to be read by specialists at other, centralized locations. This allows both greater convenience to the patient and better utilization of available interpreting specialists.

3.0 VA/DOD HEALTH IT SHARING PROGRAM

The Federal Health and Bi-directional Health Information Exchange (FHIE/BHIE) is a Congressionally mandated DOD/VA initiative to provide a secure patient data information bridge, compliant with the Health Insurance Portability and Accountability Act (HIPAA), between the VA and DOD. Both departments began developing a "comprehensive, life-long medical record for each service member" the two departments began a joint course of action aimed at achieving the capability to share patient health information for active duty military personnel and veterans. The Clinical Data Repository/Health Data Repository (CHDR) initiative is a joint effort between the VA and DOD to enable the exchange of normalized health data to support computability across agency systems.

The VA/DOD Health IT Sharing Program launched in 2000 became a full-fledged program in May 2004. The initiatives are managed under the VA/DOD Joint Electronic Records Interoperability (JEHRI) strategy. Various initiatives under the VA/DOD Interoperability suite include

- FHIE: One-way enterprise exchange of text data
- BHIE: Bidirectional real-time exchange of text data
- CHDR: Bidirectional real-time enterprise exchange of computable data.

3.1 JEHRI (JOINT ELECTRONIC HEALTH RECORDS INTEROPERABILITY)

Joint Electronic Medical Record Interoperability (JEMR) DOD and VA continue to build on the foundation of the Federal Health Information Exchange. The successful iterative development process used to develop FHIE will serve as a model for improved interoperability between DOD's CDR and VA's Health Data Repository (HDR). DOD and VA are in the process of finalizing the Joint Electronic Medical Records Interoperability Program (JEMR) Management Plan. JEMR responds to the VA/DOD Joint Strategic Plan objective of enabling efficient sharing of beneficiary data, medical records, and other information through secure and interoperable information management systems and to the President's Task Force to Improve Health Care Delivery For Our Nation's Veterans recommendation. The JEMR Program Management Plan will guide how management oversight, progress reporting, and continued development will be accomplished. One of these projects is called Clinical Data Repository/Health Data Repository (CHDR). CHDR will enable clinicians from both Departments to access clinical information from the two repositories on shared patients. Projects such as this are laying the ground work for the clinical information exchange that will enable a consolidated view of health data from DOD and VA medical records. DOD has reviewed and concurs with the Government Accounting Office letter dated May 14, 2004, and is taking actions to implement their recommendations.[3]

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CHCS/VistA Data Sharing Interface (DSI) DSI continues the success experienced by FHIE towards furthering interoperability efforts between DOD and VA. The DSI Project is leveraging the existing FHIE and Department information systems (CHCS and VistA) to meet the current business need that clinicians have for real-time clinical data exchange for shared patients. The most significant recent development has been the finalization of an integration services contract for the development of a real-time, bi-directional local exchange of health information for DOD and VA joint venture sites and sites that have medical sharing agreements. The first phase of DSI will be deployed in FY05, and will support the exchange of allergy and pharmacy data. Lessons learned in the initiative will be captured and applied to future efforts focusing on bidirectional exchange between DOD's CDR and VA's HDR.[4]

JEHRI addresses the Departments' on-going plans to improve the appropriate sharing of health information; adopt common standards for architecture, data, communications, security, technology and software; seek joint procurement and/or building of applications, where appropriate; seek opportunities for sharing existing systems and technology, and explore convergence of DOD and VA health information applications consistent with mission requirements.

JEHRI is a joint plan deployed in two phases: one way electronic data exchange executed by the FHIE; bidirectional (executed by the Bi-directional Health information Exchange (BHIE) and Laboratory Data Sharing Initiative (LDSI) and computable data exchange executed by the Clinical Data Repository/Health Data Repository (CHDR). These exchanges enable the transfer of protected information including outpatient pharmacy data, laboratory orders and results, radiology results, consult reports, allergy information, discharge summaries, admission information, pre and post deployment health assessments, post-deployment health reassessments, diagnostic codes and procedure codes.

Joint Electronic Health Records Interoperability supports the VA/DOD Joint Strategic Plan (JSP) 2006–2008 initiative: Integrated Information Sharing: Ensure that appropriate beneficiary and medical data is visible, accessible and understandable through secure and interoperable information management systems. JEHRI projects contribute to improving continuity of care for separated Service members enrolling for care at the VA; increase the information readily available to VA providers and benefits counselors and DOD providers at the point of care; and decrease the potential of error by eliminating the need to rekey laboratory results.[5]

3.2 JSP (JOINT STRATEGIC PLAN) AND JEC (JOINT EXECUTIVE COUNCIL)

VA and DOD established the Joint Executive Committee pursuant to PL 108-136, Sect. 583 which directed the Committee to make strategic planning recommendations to the Secretaries. In February 2002, Committee was merged into the JEC co-chaired by the VA Deputy Secretary and the DOD Undersecretary of Defense for Personnel and Readiness. Provides joint high-level oversight and strategic planning for interagency initiatives, including health information technology.

The VA and DOD Joint Strategic Plan (JSP) Strategic Goal 4: Integrated Information Sharing: Enable the efficient sharing of beneficiary data, medical records, and other information through secure and interoperable information management systems. VA/DOD staff complete monthly reports to monitor status. JEC reviews objectives and updates JSP annually.

JEHRI developed collaboratively by VA and DOD. Approved by the VA/DOD Joint Executive Council and signed by the Under Secretary for Health and the Assistant Secretary of Defense for Health Affairs. the first roadmap was to provide VA/DOD interoperability by 2006. There are two Phases: Federal Health Information Exchange "FHIE" and Clinical Data Repository/Health Data Repository "CHDR." The goals were to: Improve sharing of information, adopt common standards for architecture, security, communications, data, technology, and software, seek joint procurements and/or building of applications where appropriate, seek opportunities for sharing existing systems and technology, explore convergence of VA and DOD health information technology applications where feasible and within mission requirements and develop interoperable health records and data repositories.

3.3 FHIE (FEDERAL HEALTH INFORMATION EXCHANGE)

The Federal Health Information Exchange (FHIE) Program is a Federal IT health care initiative that enabled the secure electronic one-way exchange of patient medical information from DOD's legacy health information system, the Composite Health Care System (CHCS), for all separated service members to VA's VistA Computerized Patient Record System (CPRS)—the point of care in VA.

Using FHIE, VA clinicians could view all clinically pertinent available electronic data in CHCS on separated service members who have come to VA for care or benefits. FHIE data include patient demographics, laboratory results and radiology reports, outpatient pharmacy data, allergy data, admission, disposition and transfer

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data, consults, and coding from the Standard Ambulatory Data Record (SADR). VBA disability claims processors are able to view this data via the Compensation and Pension Records Interchange (CAPRI) interface.

FHIE also supported the one-way transmission of electronic health data from the DOD Pre- and Post-Deployment Health Assessment (PPDHA) surveys and the Post-Deployment Health Reassessments (PDHRA) surveys. PPDHA and PDHRA data provide useful information to clinicians about deployment-related illnesses or health status for combat veterans after their deployment.

In mid-July 2002, the first phase enabled the one-way transfer of data from DOD's CHCS to a separate database that VA clinicians could access. The second phase completed VA's and DOD's effort to add to the base patient health information available to VA clinicians via this one-way sharing capability.

In 2004 FHIE was fully operational, and VA providers at all VA medical centers and clinics nationwide had access to data on separated service members. The repository made a significant contribution to the delivery and continuity of care and adjudication of disability claims of separated members as they transitioned to veteran status.

FHIE has sent information from DOD to VA on over 2.2 million veterans, including over 27.6 million laboratory, 28.4 million pharmacies, and 4.8 million radiology clinical messages, 400 thousand consult reports and 25 million Standard Ambulatory Data Records. FHIE is significant step towards the President's health information technology plan. FHIE is already showing that clinical data can be transferred from one health care system to another in a safe, secure manner.[6]

FHIE allowed the Department of Defense to transfer healthcare data one-way to VA hospitals and healthcare facilities. The next phase, bidirectional information sharing became desirable. To facilitate data exchange between the incompatible electronic medical record systems of the DOD and VA facilities, an interface called SHARE was developed. This allowed BHIE to be used.

3.4 BHIE (FORMERLY CHCS-VISTA DSI)

The Bidirectional Health Information Exchange permits VA and DOD clinicians to view electronic healthcare data from each other's systems, VA's Computerized Patient Record System (CPRS) and DOD's Composite Health Care System (CHCS). The data are shared bidirectionally, in real time, for patients who receive care from both VA and DOD facilities.

Currently, the data made viewable using BHIE are as follows:

- VA data available to DOD
- Laboratory results
- Radiology reports
- Medication history
- Allergies
- Encounters
- Consult reports

DOD data available to VA:

- Laboratory results
- Radiology reports
- Medication history
- Allergies
- Encounters
- Theater treatment data
- Clinical notes (discharge summaries, operative summaries, OP consults, progress notes)
- Problem lists

3.5 GCPR (GOVERNMENT COMPUTER-BASED PATIENT RECORD)

GCPR refers to several types of electronic medial records in use by the U.S. government. These include HDR, CDR and CHDR. Most recent versions of EMR's use the HL7 messages are used for interchange between hospital and physician record systems and between EMR systems and practice management systems; HL7 Clinical Document Architecture (CDA) documents are used to communicate documents such as physician notes and other material.[7]

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3.6 CHDR

The Clinical Data Repository/Health Data Repository (CHDR) enables the VA's Health Data Repository (HDR) and the DOD's Clinical Data Repository (CDR) to share computable outpatient pharmacy and drug allergy information for shared patients. The Clinical Data Repository (CDR) is the component within the DOD Armed Forces Health Longitudinal Technology Application (AHLTA) that centrally stores patient health care history for all beneficiaries of the DOD TRICARE system. Similarly, the Health Data Repository (HDR) centrally stores patient health care history for all beneficiaries in the VA HealtheVet system. Once transferred, data from DOD becomes part of the VA patient's medical record and vice versa.

CHDR is an important step toward VA/DOD interoperability. To achieve interoperability, both agencies must standardize their data and agree on interagency code sets for each given domain (pharmacy, allergy, etc.). In this way, CHDR software can mediate DOD terms into VA terms and provide computable data for decision support, such as drug allergy or drug-drug interaction checking. Computable data from DOD can then be used with the same degree of interoperability as VA data to provide decision support to VA clinicians using quantitative analyses.

- Phase 1 implemented bidirectional real time exchange of computable pharmacy, allergy, demographic and laboratory data.

- Phase 2 involved additional drug–drug interaction and allergy checking.

Initial deployment of CHDR through BHIE and SHARE was completed in March 2007 at the El Paso, Augusta, Pensacola, Puget Sound, Chicago, San Diego, and Las Vegas facilities.

The goal of the VA/DOD interoperable and shared EMR projects is to continue to expand to meet the objective that all citizens will have an electronic medical record by 2014.

In short, CHDR:

- Enables exchange of and supports order checks against DOD and VA Rx and drug allergy data

- Provides bidirectional, computable data exchange between the two clinical data repositories

- Uses terminology mediation for standardized data items, allowing computability for decision support

- Provides web interface that allows specific users at the sites where CHDR is operational to mark or unmark patients for shared patient (Active Dual Consumer) data sharing

Currently CHDR is deployed at seven sites: El Paso, Augusta, Pensacola, Puget Sound, Chicago, San Diego, and Las Vegas. Broader capabilities supporting the additional bidirectional exchange of clinical laboratory computable information are being developed for later this year.

3.7 BHIE–SHARE INTERFACE

DOD and VA are developing an interface between the Bidirectional Health Information Exchange (BHIE) and "CHDR", which permits data sharing between the DOD Clinical Data Repository (CDR) and VA Health Data Repository (HDR). SHARE was developed to increase the number of DOD sites that are able to share viewable data with VA.

Presently, not all DOD sites are capable of sharing BHIE data with VA. The SHARE interface will permit DOD to transmit BHIE data through its CDR which is fully deployed across the DOD enterprise as part of AHLTA, DOD's health information system. Using the SHARE interface, the CHDR data elements will be made available to VA in a viewable format as they currently are through BHIE.

3.8 BHIE–AHLTA

In the third quarter 2007, AHLTA launched BHIE viewer. The displayed data types for this Release 1 include Allergies, Outpatient Medications (including PDTS), Laboratory Results (Chemistry and Hematology), and Radiology.

The Release 2 is scheduled for the second quarter of 2008, and expeced to add Encounters/Clinical Notes, Procedures, Problems, and Pre/Post Deployment Health Assessments/Reassessment Surveys.

The Release 3 is pending VA funding, and scheduled for the third quarter of 2008. This version is expected to access Vitals and scanned/imported documents/images.

Following more detailed schedule of BHIE and CHDR development:

OCTOBER 2004

- Outpatient pharmacy data

- Allergy data

- Patient identification and correlation

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MAY 2005

- Surgical Pathology reports
- Cytology data
- Microbiology data
- Chemistry & Hematology data
- Radiology report

JULY 2006 (BHIE-CIS)

- Discharge summaries

JULY 2007 (BHIE-AHLTA, R1)

- Interface to the Clinical Data Repository
- Access BHIE data from within AHLTA
- Allergy, outpatient pharmacy, chemistry, hematology, microbiology and radiology

SEPTEMBER 2007 (BHIE-T)

- Interface with the Theater Medical Data Store (TMDS)
- Outpatient notes from AHLTA-T, SAMS and GEMS
- Inpatient notes and ancillary data from TMIP CHCS Cache (TC2)

DECEMBER 2007 (BHIE-AHLTA R2)

- Clinical Notes
- Encounters
- Problem Lists
- Diagnoses
- DOD access to inpatient Notes, Outpatient Notes and Ancillary data from the TMDS

DECEMBER 2007 (BHIE-CIS)

- Inpatient consults
- Operative reports
- History and physical reports

Through the federal Consolidated Health Informatics (CHI) initiative, VA and other CHI participants have agreed to adopt twenty health data standards. One of those standards is the Digital Imaging and Communications in Medicine (DICOM) standard developed by the American College of Radiology and the National Electrical Manufacturing Association. DICOM delineates how images are sent and stored, and how they are associated with information about the patient. VA and DOD have adopted DICOM standards for the storage and transmission of images. The adoption of the standards related to imaging will facilitate sharing medical images in the future and further enhance the clinical information necessary to effectively and efficiently provide health care.[8]

3.9 HL7 (HEALTH LEVEL 7) AND HDF (HL7 VERSION 3 DEVELOPMENT FRAMEWORK)

HL7 is an all-volunteer, not-for-profit organization involved in development of international healthcare standards. HL7 and its members provide a framework (and related standards) for the exchange, integration, sharing and retrieval of electronic health information. Adopted by several national Standards Developing Organizations outside U.S. Not accredited by ANSI.

HL7 version 2 defines a series of electronic messages to support administrative, logistical, and financial as well as clinical processes. HL7 v2.x mostly uses a proprietary (non-XML) encoding syntax based on delimiters. HL7 v2.x has allowed for the interoperability between electronic Patient Administration Systems (PAS), Electronic Practice Management (EPM) systems, Laboratory Information Systems (LIS), Dietary, Pharmacy and Billing systems as well as Electronic Medical Record (EMR) or Electronic Health Record (EHR) systems.

HL7's v2.x messaging standard is supported by every major medical information systems vendor in the United States The HL7 version 3 standard has the aim to support any and all healthcare workflows. HL7 Version 3 Development Framework (HDF) The v3 standard, as opposed to version 2, is based on a formal methodology (the HDF) and object-oriented principles. The HL7 Version 3 messaging standard defines a series of electronic messages

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(called interactions) to support any and all healthcare workflows. HL7 v3 messages are based on an XML encoding syntax. The HL7 version 3 Clinical Document Architecture (CDA) is an XML-based markup standard intended to specify the encoding, structure and semantics of clinical documents for exchange.

The HL7 version 3 Development Framework (HDF) is a continuously evolving process that seeks to develop specifications that facilitate interoperability between healthcare systems. The HL7 vocabulary specifications, and model-driven process of analysis and design combine to make HL7 version 3 one methodology for development of consensus-based standards for healthcare information system interoperability. The HDF is the most current rendition of the HL7 v3 development methodology

3.10 LDSI (LABORATORY DATA SHARING INITIATIVE)

The Laboratory Data Sharing and Interoperability (LDSI) application supports the electronic order entry and real-time lab results retrieval between DOD, VA, and commercial reference laboratories. LDSI provides laboratory order portability between DOD/VA sites that have local sharing agreements for laboratory services.

The goals of the project are: 1) to share/coordinate resources to reduce costs and redundancies while increasing efficiencies within the two organizations, and 2) facilitate electronic exchange of patient information between DOD and VA to enhance patient care delivery.

LDSI supports laboratory order and results retrieval for chemistry and hematology laboratory tests. As part of VA and DOD's joint work pursuant to the 2003 National Defense Authorization Act (NDAA) Demonstration Site provisions, VA and DOD have worked to enhance LDSI to support anatomic pathology and microbiology labs. This work is taking place at the El Paso and San Antonio NDAA sites. Initial testing of the enhanced capability has been successful.

As of 2007 LDSI supports the bidirectional electronic ordering and results retrieval of chemistry, anatomical pathology and microbiology lab tests at nine sites, such as El Paso and San Antonio.

3.11 NDAA INPATIENT DATA SHARING (IDS)

Facilitates to share: 1) inpatient consults, 2) operative reports, and 3) discharge summaries.

VA and DOD are working together to make DOD radiological images and scanned patient records for polytrauma patients available to VA clinicians. This project is presently limited to severely injured patients who are transferred from either Walter Reed Army Medical Center (WRAMC), Bethesda National Naval Medical Center (NNMC), or Brooke Army Medical Center (BAMC) to one of the four VA polytrauma centers which are located at Tampa, Richmond, Minneapolis, and Palo Alto.

Presently, sending patient medical information between DOD and VA is not fully automated and involves labor intensive business processes to copy and transmit files in various ways, including sending a hand carried CD/DVD with the patient. The short term solution is to electronically transfer images and PDF files of scanned patient records between Walter Reed Army Medical Center, Bethesda National Naval Medical Center, Brooke Army Medical Center, and the four VA polytrauma centers. This electronic transfer uses the existing authorized Austin Automation Center VA/DOD gateway. Currently, the four polytrauma centers are receiving scanned/indexed medical records from WRAMC and NNMC and multiple types of radiological images from all three DOD facilities. It is anticipated that by the end of August 2007 BAMC will have the capability to transmit scanned medical records. A long term solution will require further work in communications and health information systems, and will include a bidirectional exchange of information.

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NOTES

1 Mr. James C. Reardon's data (Military Health System, Chief Information Officer, U.S. House of Representatives, May 19, 2004) regarding Composite Health Care System (CHCS) was cited in Slide 8 and 9. Charlene Colon, "Data Quality Tools You Can Use (Part 1)." Fort Bragg, NC: Womack Army Medical Center, June 2007. http://www.tricare.mil/ocfo/_docs/Colon%20-%20CHCS2.ppt

2 Reardon, 2004.

3 Reardon, 2004.

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ACRONYMS

ACRONYM	DEFINITION
AHLTA	Armed Forces Health Longitudinal Technology Application
ANSI	American National Standards Institute
BBS	Bulletin Board System
BHIE	Bi-directional Health Information Exchange
CAPRI	Compensation and Pension Records Interchange
CDA	Clinical Document Architecture
CDR	Clinical Data Repository
CHCS	Composite Health Care System
CHDR	Clinical Data Repository/ Health Data Repository
CHI	Consolidated Health Informatics
CLN	Clinical System Menu
CMV	Controlled Medical Vocabulary
COTS	Commercial off-the-Shelf
CPOE	Computerized Physician Order Entry
CPRS	Computerized Patient Record System
CPT-4	Current Procedural Terminology, 4th Edition
DEC	Digital Equipment Corporation
DHCP	Decentralized Hospital Computer Program
DICOM	Digital Imaging and Communications in Medicine
DOD	Department of Defense
DSI	Data Sharing Interface
E&M Coding	Evaluation and Management Coding
EHR	Electronic Health Record
EKG	Electrocardiogram
EMR	Electronic Medical Record
EPM	Electronic Practice Management
FHIE	Federal Health Information Exchange
GCPR	Government Computer-based Patient Record
GUI	Graphical User Interface
HDD	Health Data Directory
HDF	HL7 Version 3 Development Framework
HEV	HealtheVet
HIPPA	Health Insurance Portability and Accountability Act
HL7	Health Level Seven
ICD-9	International Statistical Classification of Diseases and Related Health Problems

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ACRONYMS (CONTINUED)

ACRONYM	DEFINITION
JEC	Joint Executive Council
JEHRI	Joint Electronic Records Interoperability
JEMR	Joint Electronic Medical Records Interoperability Program
JSP	Joint Strategic Plan
LDSI	Laboratory Data Sharing Initiative
LIS	Laboratory Information Systems
MEDCIN	A system of standardized medical terminology
MCP	Managed Care Program
MUMPS	Massachusetts General Hospital Utility Multi-Programming System
NDAA	National Defense Authorization Act
OB	Obstetrics
OCONUS	Outside the Continental United States. Includes Alaska and Hawaii
PAS	Patient Administration Systems
PDHRA	Post-Deployment Health Reassessments
PHR	Pharmacy System Menu."
PHR	Personal Health Record
PKC COUPLERS	Problem Knowledge Couplers
PPDHA	Pre- and Post-Deployment Health Assessment
RDV	Remote Data Viewer
RPC	Remote Procedure Call
SADR	Standard Ambulatory Data Record
SAIC	Science Applications International Corporation
SHARE	Interface for BHIE
SNOMED CT	Systematized Nomenclature of Medicine -- Clinical Terms
SOAP	Simple Object Access Protocol
SQL	Structured Query Language
TMDS	Theater Medical Data Store
TMIP	Theater Medical Information Program
VA	Department of Veterans Affairs
VBA	Veterans Benefits Administration
VHA	Veterans Health Administration
VISTA	Veterans Health Information Systems and Technology Architecture
WAM	Workload Assignment Module
XML	Extensible Markup Language

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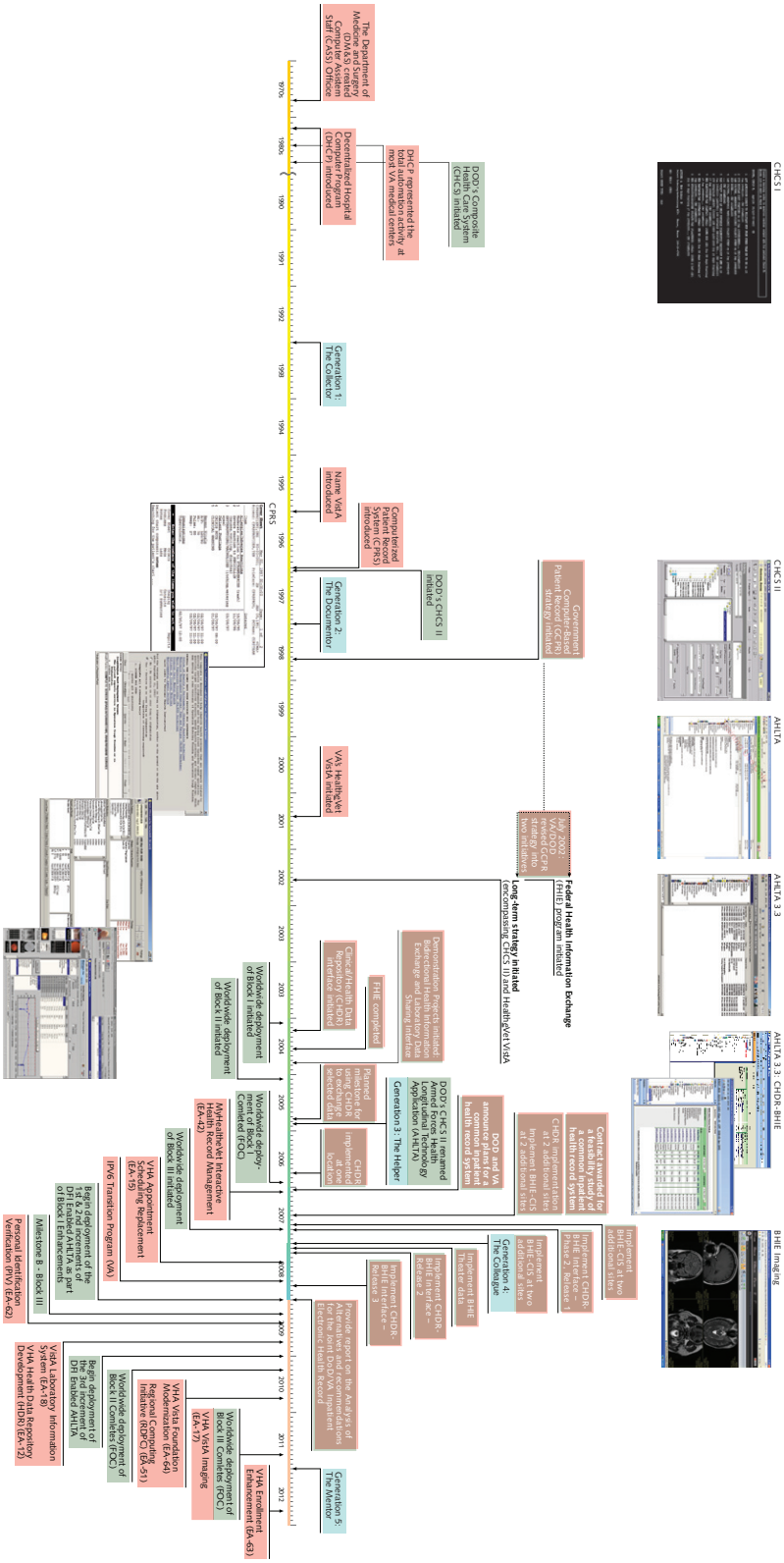
CONTEXTUAL HISTORY AND VISUAL TIMELINE
OF AHLTA AND VISTA/CPRS PRODUCTS
SAYOKO YOSHIDA, PIIM & BENJAMIN BACON, PIIM

VISUAL TIMELINE OVERVIEW



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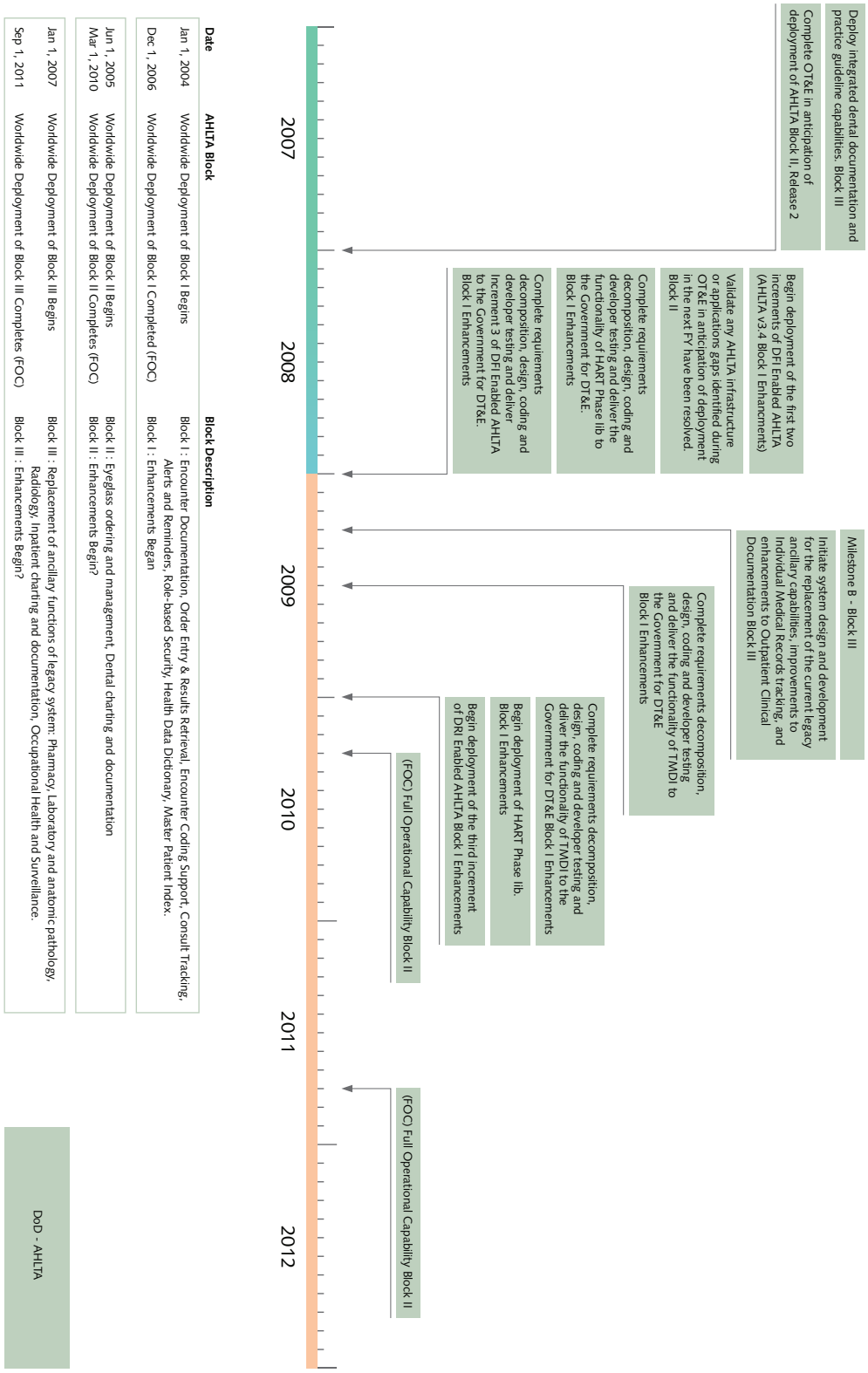

Date	AHLTA Block	Block Description
Jan 1, 2004	Worldwide Deployment of Block I Begins	Block I : Encounter Documentation, Order Entry & Results Retrieval, Encounter Coding Support, Consult Tracking, Alerts and Reminders, Role-based Security, Health Data Dictionary, Master Patient Index.
Dec 1, 2006	Worldwide Deployment of Block I Completed (FOC)	Block I : Enhancements Began
Jun 1, 2005	Worldwide Deployment of Block II Begins	Block II : Eyeglass ordering and management, Dental charting and documentation
Mar 1, 2010	Worldwide Deployment of Block II Completes (FOC)	Block II : Enhancements Begin?
Jan 1, 2007	Worldwide Deployment of Block III Begins	Block III : Replacement of ancillary functions of legacy system: Pharmacy, Laboratory and anatomic pathology, Radiology, Inpatient charting and documentation, Occupational Health and Surveillance.
Sep 1, 2011	Worldwide Deployment of Block III Completes (FOC)	Block III : Enhancements Begin?

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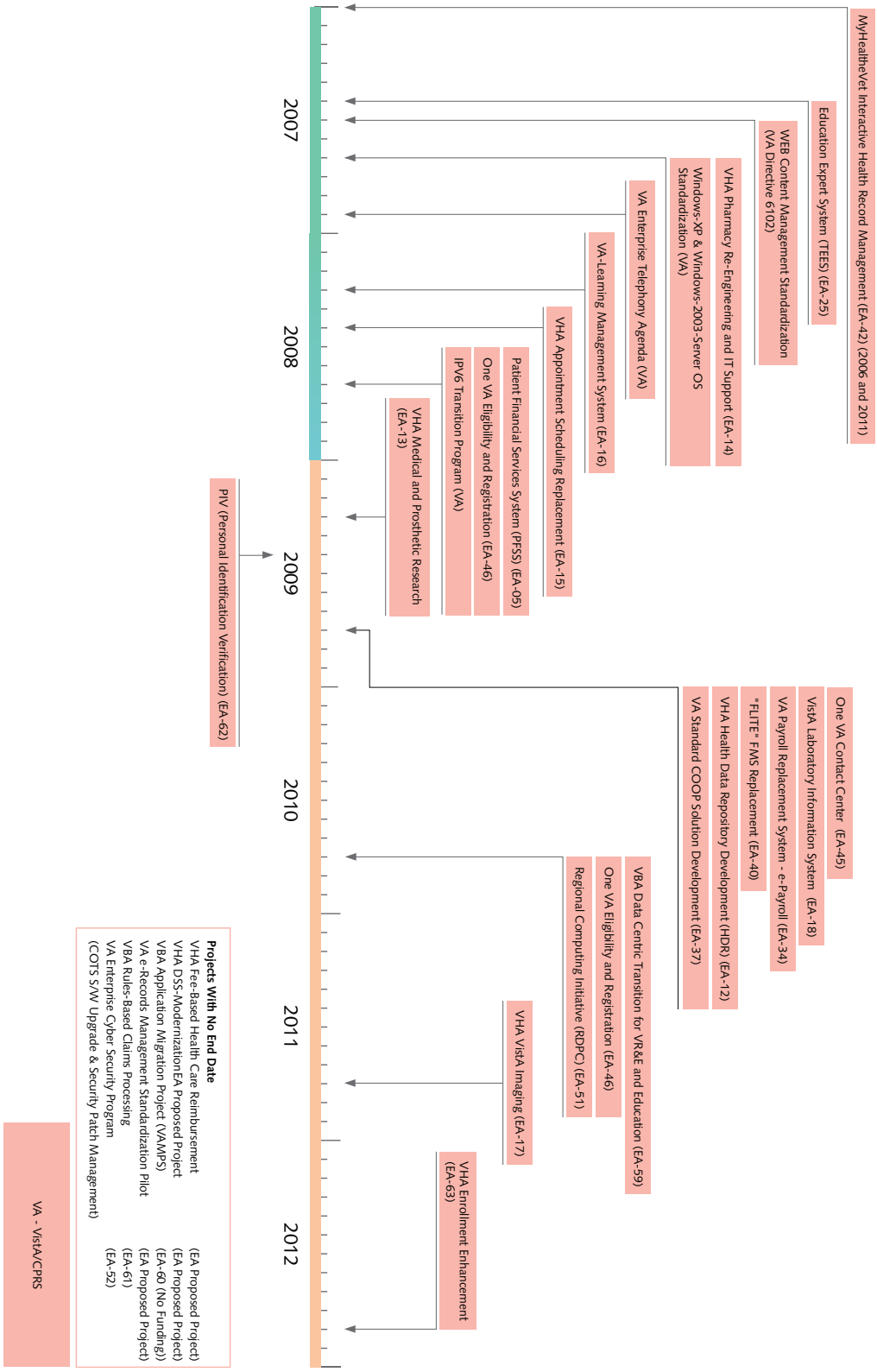
VISUAL TIMELINE: VISTA



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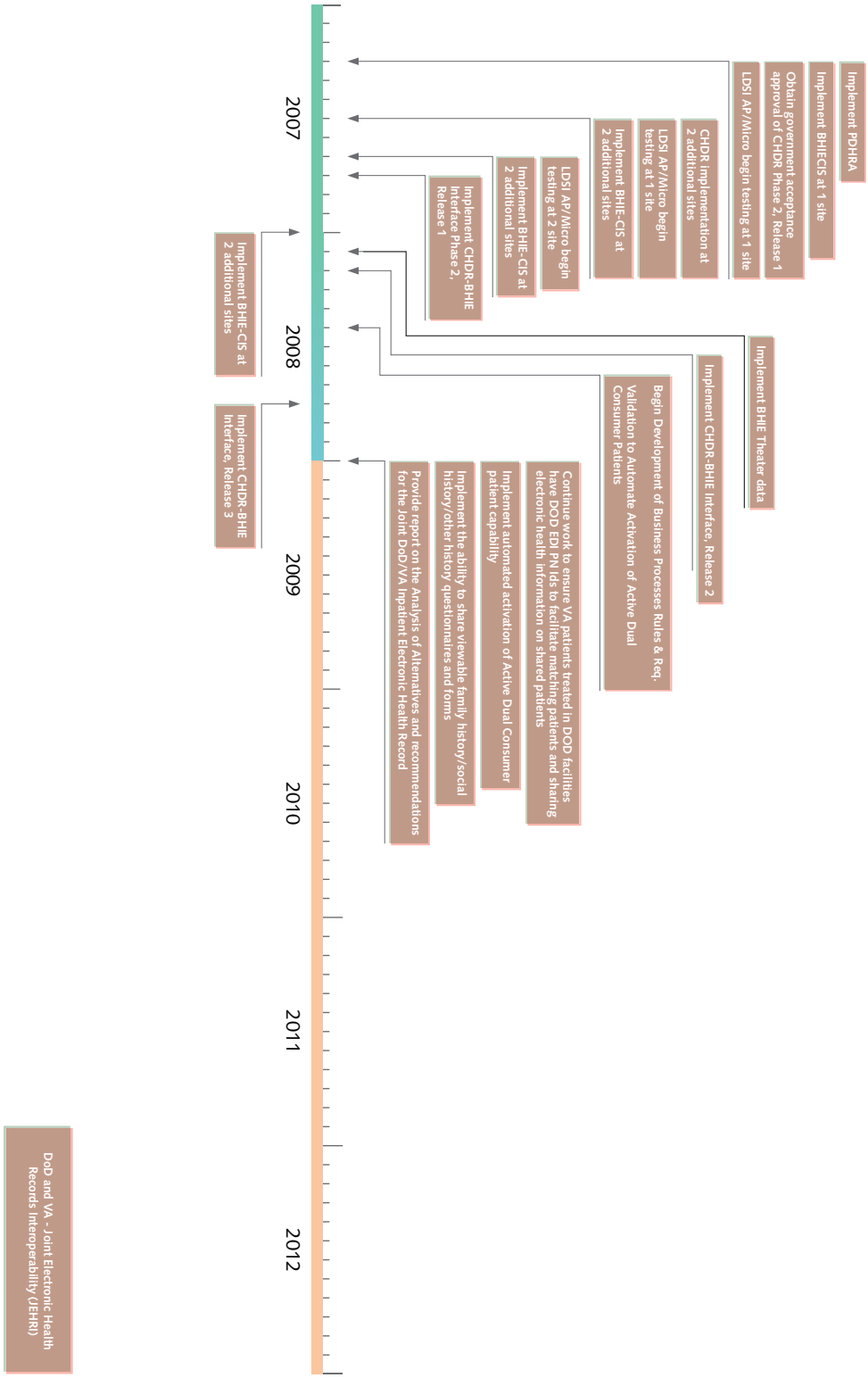
VISUAL TIMELINE: DOD AND VA JOINT ELECTRONIC HEALTH RECORD INTEROPERABILITY



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VISUAL TIMELINE: DOD AND VA JOINT STRATEGIC PLAN

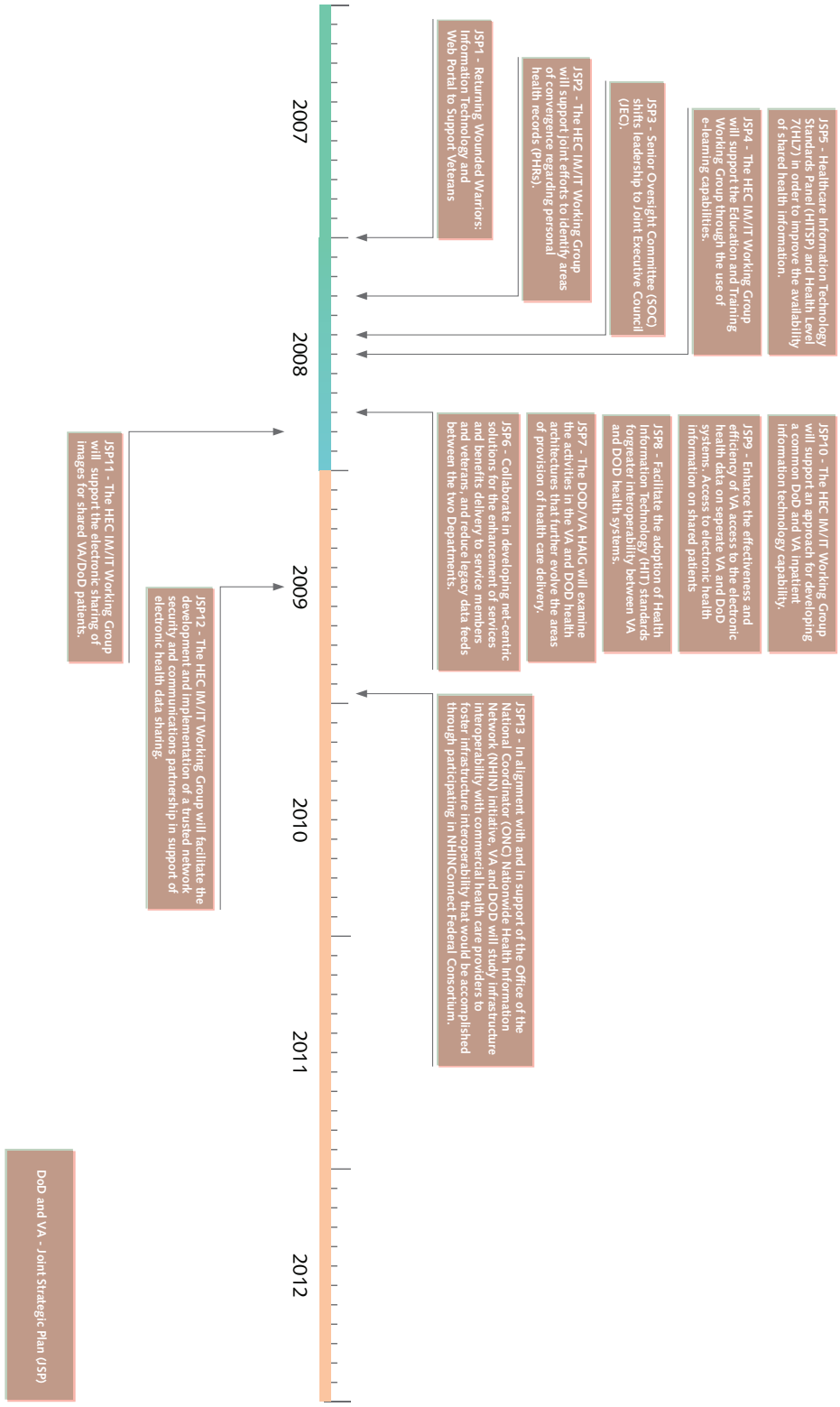

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TABLE TIMELINE: OVERVIEW

YEAR	CHCS I / AHLTA (CHCS II)	DHCP / VISTA / CPRS
1960		*1965–1977: The Age of Cooperation: Birth of the VistA Strategy and Architecture* President Lyndon Johnson signed the Social Security Amendments Act, known as the Medicare Act.
1970s		*1977–1982: The Age of Struggle: Birth of the VistA Software* George Timson, one of the architects of VistA who has been involved with VistA since the early years of its programming, wrote an extensive essay on the struggle to get VistA officially adopted by the VA.
1980s	1988 Science Applications International Corporation (SAIC) won a competition for the original $1.01 billion contract to design, develop, and implement the Composite Health Care System (CHCS).	*1982 - 1993: The Age of Expansion: Widespread Adoption and Improvement* Early 1980s (official in 1982) Decentralized Hospital Computer Program (DHCP), the VHA's first electronic information system was introduced. VHA committed to building an electronic health care architecture, the Decentralized Hospital Computer Program (DHCP). VA selected MUMPS (Massachusetts General Hospital Utility Multi-Programming System) as the primary programming language for DHCP. 1985 DHCP represented the total automation activity at most VA medical centers and all 169 sites were up and running.
1993	Generation 1: The Collector (1993–) CHCS was first deployed, and used by all United States and OCONUS military health care centers.	
1994		*1994–2004: The Modern Age: Achievements and Contradictions* The Decentralized Hospital Computer Program (DHCP) was renamed VistA, Veterans Health Information System and Technology Architecture by Dr. Ken Kizer of the Under Secretary for Health of the U.S. Department of Department of Veterans Affairs.

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TABLE TIMELINE: OVERVIEW (CONTINUED)

YEAR	CHCS I / AHLTA (CHCS II)	DHCP / VISTA / CPRS
1996	SAIC delivers CHCS on schedule, on cost, and with greater quantified benefits than promised. Deployed worldwide, the system serves more than 500 Army, Navy, and Air Force hospitals and clinics and offers the benefits of electronic health records. The General Accounting Office (GAO) issues a positive report to the U.S. Congress calling the worldwide deployment of CHCS "a major achievement, given the complexity of the system and the number of facilities involved."	VHA introduced VistA, a rich automated environment that supports day-to-day operations at local VA health care facilities. VistA is built on a client-server architecture, which ties together workstations and personal computers with graphical user interfaces at VHA facilities, as well as software developed by local medical facility staff. VistA also includes the links that allow commercial off-the-shelf software and products to be used with existing and future technologies.
1997	SAIC helps develop another groundbreaking capability for the Military Health System: transferring electronic patient records from U.S. hospitals to on-site attending physicians in the jungles of Thailand. DOD began developing CHCS II and the department expected to complete deployment of all of its major system capabilities by September 2008. DOD reported expenditures of about $600 million for the system through fiscal year 2004.	Computerized Patient Record System (CPRS), a graphical user interface for clinicians, was introduced. For clinicians, CPRS dramatically improves the ease of recording clinical details and provides easy access to patient charts.
1998	*Generation 2: The Documentor (1998–)* CHCS continues to draw accolades and win awards. Government Executive magazine writes, "In a government where massive information technology projects routinely fail... CHCS stands out as a shining success."	
2001	Following the World Trade Center attacks, the USNS Comfort hospital ship docks off New York City to provide support to first responders. SAIC IT staff—and the CHCS system—are onboard to help.	VA began work on HealtheVet VistA and its associated Health Data Repository and expected to complete all six initiatives comprising this system in 2012. VA reported spending about $270 million on initiatives that comprise HealtheVet VistA through fiscal year 2004.

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TABLE TIMELINE: OVERVIEW (CONTINUED)

YEAR	CHCS I / AHLTA (CHCS II)	DHCP / VISTA / CPRS
2002	Aarhus told an audience at the Healthcare Information and Management Systems Society's annual conference in February that when the effort began in 2002, analysts tried to retrieve data from AHLTA's Clinical Data Repository. But AHLTA is a transactional system, Aarhus said, which means it is optimized for day-to-day operational use and mainly for processing one record at a time. Transactional systems don't do a good job of reporting, he said. Queries that required scanning and collecting records from the entire system then called the Composite Health Care System II (CHCS II) could bring AHLTA to a standstill.	
2003	MHS Executive Information and Decision Support Program Office tried a different tack in 2003 by creating a data warehouse that would extract information from the Clinical Data Repository and report it via a Business Objects software interface. But the program didn't have its own funding and was forced to borrow systems that were not powerful enough to do the job.	
2003–4	During the Iraqi conflict, SAIC staff onboard the USNS Comfort manage the hospital information system, helping doctors and nurses access important medical data as they treat wounded combatants. After the December 26, 2004 tsunami strikes South Asia, SAIC sour IT staff provide similar support to help the doctors and nurses onboard the USNS Mercy treat tsunami victims.	

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TABLE TIMELINE: OVERVIEW (CONTINUED)

YEAR	CHCS I / AHLTA (CHCS II)	DHCP / VISTA / CPRS
2005	*Generation 3: The Helper (2005–)* In November 2005, top military leaders renamed it AHLTA and began touting its effectiveness and its ability to produce reports. Keesler Air Force Base in Biloxi, Miss., suffers a direct hit from Hurricane Katrina, severely damaging its hospital. Determined to help hurricane-displaced patients, SAIC staff bring the legacy CHCS back online and enable the option to transfer medical records of displaced patients from Keesler to other military hospitals outside the stricken area. SAIC then uses data from the new AHLTA system (formerly called CHCS II) to help retrieve electronic medical records on Keesler inpatients who were evacuated to military medical centers in Texas. Shortly before Katrina strikes, SAIC wins a three-year contract to continue sustainment support to the Military Health System.	
2006	In 2006, the program got funding and acquired new hardware, including high-end IBM processors and ten servers to run Business Objects software. Performance has improved significantly, Aarhus said. A query that once took eight minutes now gets results in 35 seconds, he said, and it has a growing population of enthusiastic users.	
2007	The Clinical Data Mart also came in handy when thirteen lots of flu vaccine were recalled in December 2007. In less than three hours, regional officials retrieved the names of service members who had been vaccinated on certain dates and sent letters notifying them to get medical help if they experienced problems. A previous recall effort took six weeks because the records had to be reviewed manually.	
2008	*Generation 4: The Collegue (2008–)*	
2012	*Generation 5: The Mentor (2012–)*	

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TABLE TIMELINE: AHLTA-VISTA INTEROPERABILITY

YEAR	AHLTA-VISTA INTEROPERABILITY
1998	Following a presidential call for VA and DOD to start developing a "comprehensive, life-long medical record for each service member," the two departments began a joint course of action aimed at achieving the capability to share patient health information for active duty military personnel and veterans. Their first initiative, was the Government Computer-Based Patient Record (GCPR).
2002	VA and DOD revised GCPR strategy into two initiatives: (1) Federal Health Information Exchange (FHIE) program (short-term strategy) and (2) Healthe People (Federal) stragety (long-term strategy) FHIE Phases: 1) In mid-July 2002, the first phase enabled the one-way transfer of data from DOD's CHCS to a separate database that VA clinicians could access. 2) The second phase completed VA's and DOD's effort to add to the base patient health information available to VA clinicians via this one-way sharing capability.
2003	The departments reported total BCPR/FHIE costs of about $85 million through fiscal year 2003.
2004	FHIE was fully operational, and VA providers at all VA medical centers and clinics nationwide had access to data on separated service members. The repository made a significant contribution to the delivery and continuity of care and adjudication of disability claims of separated members as they transitioned to veteran status. Clinical/Health Data Repository (CHDR) initiated. The goal is to develop an interface linking VA's Health Cata Repository (HDR) and DOD's Clinical Data Repository (CDR). Short-term projects, Bidirectional Health Information Exchange (BHIE), a project to exchange health information on shared patients, and Laboratory Data Sharing Interface (LDSI), an application used to transfer laboratory work orders and results, initiated. In September 2004 The departments successfully completed Phase I of CHDR by demonstrating the two-way exchange of pharmacy information with a prototype in a controlled laboratory environment. VA and DOD developed an architecture for the CHDR electronic interface. It includes major elements required in a complete architecture. For example, it defines system requirements and allows these to be traced to the functional requirements, it includes the design and control specifications for the interface design, and it includes design descriptions for the software.

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TABLE TIMELINE: AHLTA-VISTA INTEROPERABILITY

YEAR	AHLTA-VISTA INTEROPERABILITY
2005	BHIE was tested and deployed at VA and DOD facilities in Puget Sound, Washington, and El Paso, Texas, where the exchange of demographic, outpatient pharmacy, radiology, laboratory, and allegy data (text only) has been achieved. More additional locations to come.
2007	FHIE: According to DOD officials, over 184 million clinical messages on more than 3.8 million veterans had been transferred to the FHIE data repository as of March. 2007. As of March 2007, VA had access to data for more than 681,000 separated service members and demobilized Reserve and National Guard members who had been deployed. LDSI is fully operational and is deployed when local agencies have a business case for its use and sign an agreement. It supports a variety of chemistry and hematology tests, and work is under way to include microbiology and anatomic pathology. BHIE interface is available throughout VA and partially deployed at DOD. The interface permits a medical care provider to query patient data from all VA sites and any DOD site where it is installed and to view that data on screen almost immediately. It not only allows DOD and VA to view each other's information, but also allows DOD sites to see previously inaccessible data at other DOD sites. DOD had developed an interface to the Clinical Information System (CIS), an inpatient system used by many DOD facilities, which will provide bidirectional views of discharge summaries. The BHIE-CIS interface is currently deployed at five DOD sites and are planned for eight others. Further, interfaces to two additional systems are planned for June and July 2007: an interface to DOD's CDR and DOD's Theater Medical Data Store.

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TABLE TIMELINE 3: AHLTA BLOCK AND AHLTA TASK

DATE	AHLTA BLOCK	BLOCK DESCRIPTION
Jan. 1, 2004	Worldwide Deployment of Block I Begins	Block I : Encounter Documentation, Order Entry & Results Retrieval, Encounter Coding Support, Consult Tracking, Alerts and Reminders, Role-based Security, Health Data Dictionary, Master Patient Index.
Dec. 1, 2006	Worldwide Deployment of Block I Completed (FOC)	Block I : Enhancements Began
Jun. 1, 2005	Worldwide Deployment of Block II Begins	Block II : Eyeglass ordering and management, Dental charting and documentation
Mar. 1, 2010	Worldwide Deployment of Block II Completes (FOC)	Block II : Enhancements Begin?
Jan. 1, 2007	Worldwide Deployment of Block III Begins	Block III : Replacement of ancillary functions of legacy system: Pharmacy, Laboratory and anatomic pathology, Radiology, Inpatient charting and documentation, Occupational Health and Surveillance.
Sep. 1, 2011	Worldwide Deployment of Block III Completes (FOC)	Block III : Enhancements Begin?

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TABLE TIMELINE 3: AHLTA BLOCK AND AHLTA TASK (CONTINUED)

DATE	AHLTA TASK	AHLTA BLOCK
Jan. 1, 2008	Deploy integrated dental documentation and practice guideline capabilities.	Block III
Jan. 1, 2008	Complete OT&E in anticipation of deployment of AHLTA Block 2, Release 2	Block II
Jan. 1, 2009	Begin deployment of the first two increments of DFI Enabled AHLTA as part of AHLTA V3.4	Block I Enhancements
Jan. 1, 2009	Validate that any AHLTA infrastructure or applications gaps identified during OT&E in anticipation of deployment in the next FY have been resolved.	Block II
Jan. 1, 2009	Complete requirements decomposition, design, coding and developer testing and deliver Increment 3 of DFI enabled AHLTA to the Government for DT&E.	Block I Enhancements
Jan. 1, 2009	Complete requirements decomposition, design, coding and developer testing and deliver Increment 3 of DFI Enabled AHLTA to the Government for DT&E.	Block I Enhancements
Mar. 1, 2009	Milestone B	Block III
Mar. 1, 2009	Initiate system design and development for the replacement of the current legacy ancillary capabilities, improvements to Individual Medical Records tracking, and enhancements to Outpatient Clinical Documentation	Block III
Jun. 1, 2009	Complete requirements decomposition, design, coding and developer testing and deliver the functionality of CPE Group 2 Enhancements to the Government to DT&E.	Block I Enhancements
Jan. 1, 2010	Complete requirements decomposition, design, coding and developer testing and deliver the functionality of TMDI to the Government for DT&E.	Block I Enhancements
Jan. 1, 2010	Begin deployment of HART Phase IIb.	Block I Enhancements
Jan. 1, 2010	Begin deployment of the third increment of DRI enabled AHLTA	Block I Enhancements
Mar. 1, 2010	(FOC) Full Operational Capability Block II	Block II
Sep. 1, 2011	(FOC) Full Operational Capability Block III	Block III

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TABLE TIMELINE 4: VISTA TASK

DEADLINE	VA INITIATIVE	VA TASK ORDER
Sep. 1, 2005	VA e-Travel Solution	Internal
Sep. 1, 2005	Telecom Modernization Project (TMP)	Internal
Dec. 1, 2005	Exchange (Messaging) Server Consolidation Program	Internal
Jul. 1, 2006	WEB Presentation Standardization	Internal
Sep. 1, 2006	VA Radio Frequency Transition PMO	Internal
2006–2011	MyHealtheVet Interactive Health Record Management	EA-42
Jun. 1, 2007	Education Expert System (TEES)	EA-25
Jul. 1, 2007	WEB Content Management Standardization	VA Directive 6102
Sep. 1, 2007	VHA Pharmacy Re-Engineering and IT Support	EA-14
Sep. 1, 2007	Windows-XP & Windows-2003-Server OS Standardization	Internal
Dec. 1, 2007	VA Enterprise Telephony Agenda	Internal
Apr. 1, 2008	VA-Learning Management System	EA-16
Jun. 1, 2008	VHA Appointment Scheduling Replacement	EA-15
Sep. 1, 2008	Patient Financial Services System (PFSS)	EA-05
Sep. 1, 2008	One VA Eligibility and Registration	EA-46
Sep. 1, 2008	IPV6 Transition Program	Internal
Mar. 1, 2009	VHA Medical and Prosthetic Research	EA-13
Mid-2009	PIV (Personal Identification Verification)	EA-62
Sep. 1, 2009	One VA Contact Center	EA-45
Sep. 1, 2009	VistA Laboratory Information System	EA-18
Sep. 1, 2009	VA Payroll Replacement System - e-Payroll	EA-34
Sep. 1, 2009	"FLITE" FMS Replacement	EA-40
Sep. 1, 2009	VHA Health Data Repository Development (HDR)	EA-12
Sep. 1, 2009	VA Standard COOP Solution Development	EA-37
Sep. 1, 2010	VBA Data Centric Transition for VR&E and Education	EA-59
Sep. 1, 2010	VHA Vista Foundation Modernization	EA-64 - Replaces HealtheVet-Vista (EA-41)
Sep. 1, 2010	Regional Computing Initiative (RDPC)	EA-51
Sep. 1, 2011	VHA VistA Imaging	EA-17
Sep. 1, 2012	VHA Enrollment Enhancement	EA-63
n/a	VHA Fee-Based Health Care Reimbursement	EA Proposed Project
n/a	VHA DSS-Modernization	EA Proposed Project
n/a	VBA Application Migration Project (VAMPS)	EA-60 (No Funding)

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TABLE TIMELINE 4: VISTA TASK (CONTINUED)

DEADLINE	VA INITIATIVE	VA TASK ORDER
n/a	VA e-Records Management Standardization Pilot	EA Proposed Project
n/a	VBA Rules-Based Claims Processing	EA-61
Ongoing	VA Enterprise Cyber Security Program (COTS S/W Upgrade & Security Patch Management)	EA-52

TABLE TIMELINE 5: JOINT ELECTRONIC HEALTH RECORDS INTEROPERABILITY (JEHRI) TASK

DATE	JOINT ELECTRONIC HEALTH RECORDS INTEROPERABILITY (JEHRI) TASK
Mar. 1, 2007	LDSI AP/Micro begin testing at one site
Mar. 1, 2007	Obtain government acceptance approval of CHDR Phase 2, Release 1
Mar. 1, 2007	Implement BHIECIS at one site
Mar. 1, 2007	Implement PDHRA
Jun. 1, 2007	Implement BHIE-CIS at two additional sites
Jun. 1, 2007	LDSI AP/Micro begin testing at one site
Jun. 1, 2007	CHDR implementation at two additional sites
Aug. 1, 2007	LDSI AP/Micro begin testing at one site
Aug. 1, 2007	Implement BHIE-CIS at two additional sites
Sep. 1, 2007	Implement CHDR-BHIE Interface–Phase 2, Release 1
Jan. 1, 2008	Implement BHIE-CIS at 2 additional sites
Feb. 1, 2008	Implement BHIE Theater data
Mar. 1, 2008	Implement CHDR-BHIE Interface, Release 2
Jun. 1, 2008	Begin Development of Business Processes Rules & Req. Validation to Automate Activation of Active Dual Consumer Patients
Sep. 1, 2008	Implement CHDR-BHIE Interface, Release 3
Jan. 1, 2009	Implement automated activation of Active Dual Consumer patient capability
Jan. 1, 2009	Continue work to ensure VA patients treated in DOD facilities have DOD EDI PN Ids to facilitate matching patients and sharing electronic health information on shared patients
Jan. 1, 2009	Implement the ability to share viewable family history/social history/other history questionnaires and forms
Jan. 1, 2009	Provide report on the Analysis of Alternatives and recommendations for the Joint DOD/VA Inpatient Electronic Health Record

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TABLE TIMELINE 6: JOINT STRATEGIC PLAN (JSP) TASK

DEPLOYMENT	JOINT STRATEGIC PLAN (JSP) TASK	JSP PROJECT	JSP ID
Dec. 31, 2007	The HEC IM/IT Working Group will provide additional support for implementation of requirements of the President's Commission on Care for America's Returning Wounded Warriors by:	Integrated Information Sharing	JSP1
Nov. 1, 2007	(1) Establishing an information technology plan that will support the use of a recovery plan by the Recovery Coordinator, and will integrate essential clinical and non-clinical aspects of recovery of seriously ill and injured service-members and veterans by November 1, 2007.	Integrated Information Sharing	JSP1.1
Dec. 31, 2007	(2) Developing a plan to execute a single Web portal to support the needs of the wounded, ill, and injured service-members and veterans by December 31, 2007.	Integrated Information Sharing	JSP1.2
Mar. 31, 2008	The HEC IM/IT Working Group will support joint efforts to identify areas of convergence regarding personal health records (PHRS).	Integrated Information Sharing	JSP2
Dec. 31, 2007	(1) Complete implementation of education objects for MyHealtheVet (MHV) and TRICARE Online (TOL) by December 31, 2007.	Integrated Information Sharing	JSP2.1
Dec. 31, 2007	(2) Complete business and technical requirements for authentication and registration portability for MHV and TOL by December 31, 2007.	Integrated Information Sharing	JSP2.2
Dec. 31, 2007	(3) Complete a white paper on health information portability between TOL and MHV by December 31, 2007.	Integrated Information Sharing	JSP2.3
Dec. 31, 2007	(4) Document a joint VA/DOD alignment strategy for the delivery of MHV and TOL PHRS by December 31, 2007.	Integrated Information Sharing	JSP2.4
Dec. 31, 2007	(5) Begin collaboration on a joint performance measurement framework for PHRS in concert with the American Health Information Community by December 31, 2007.	Integrated Information Sharing	JSP2.5
Mar 31, 2008	(6) Submit a draft PHR white paper to the HEC IM/IT Working Group by March 31, 2008.	Integrated Information Sharing	JSP2.6

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TABLE TIMELINE 6: JOINT STRATEGIC PLAN (JSP) TASK (CONTINUED)

DEPLOYMENT	JOINT STRATEGIC PLAN (JSP) TASK	JSP PROJECT	JSP ID
May 1, 2008	Senior Oversight Committee (SOC) shifts leadership to Joint Executive Council (JEC) • Disability Evaluation System • Traumatic Brain Injury/Post Traumatic Stress Disorder • Case Management • VA/DOD Data Sharing • Facilities • Clean Sheet Analysis • Legislation–Public Affairs • Personnel–Pay Issues Improve the access, quality, cost effectiveness, and efficiency with which benefits and services are provided to beneficiaries of VA and DoD through increased resource sharing and organizational collaboration. Update and complete coordination of VA/DOD JSP for fiscal years 2009–2011. VA and DOD will seek JEC co-chair approval.	Leadership	JSP3
Jun. 30, 2008	The HEC IM/IT Working Group will support the Education and Training Working Group through the use of e-learning capabilities.	Integrated Information Sharing	JSP4
Jun. 30, 2008	(1) Complete business rules for the sharing of e-learning educational objects between VA and DOD by June 30, 2008.	Integrated Information Sharing	JSP4.1
Jun. 30, 2008	(2) Implement shared e-learning educational objects between VA and DOD by June 30, 2008.	Integrated Information Sharing	JSP4.2
Jun. 30, 2008	VA and DOD will structure their health enterprise architectures to support sharing of timely, consistent health data. The DOD/VA Health Architecture Interagency Group (HAIG) will continue participating in and contributing to standards related organizations such as Healthcare Information Technology Standards Panel (HITSP) and Health Level 7 (HL7) in order to improve the availability of shared health information in support of consumer-driven health care and interoperable health information for DOD/VA beneficiaries.	Integrated Information Sharing	JSP5
Jun. 30, 2008	(1) The HAIG will analyze and report to the HEC Information Management/Information Technology (IM/IT) Working Group on current processes and opportunities to promote health care quality and efficiency through information sharing to empower our beneficiaries by June 30, 2008.	Integrated Information Sharing	JSP5.1

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TABLE TIMELINE 6: JOINT STRATEGIC PLAN (JSP) TASK (CONTINUED)

DEPLOYMENT	JOINT STRATEGIC PLAN (JSP) TASK	JSP PROJECT	JSP ID
Sep.	Ensure that appropriate beneficiary and medical information is visible, accessible, and understandable through secure and interoperable information management systems. VA and DoD will utilize interoperable enterprise architectures and data management strategies to support timely and accurate delivery of benefits and services. The emphasis will be on working together to store, manage and share data, and streamline applications and procedures to make access to services and benefits easier, faster, and more secure. VA and DoD will utilize their enterprise architectures to foster an environment to support secure sharing of timely, consistent, personnel-related data to enhance service delivery in both Departments. The BEC Information Sharing/Information Technology Working Group will collaborate in developing net-centric solutions for the enhancement of services and benefits delivery to service members and veterans, and reduce legacy data feeds between the two Departments.	Integrated Information Sharing	JSP6
n/a	(1) Support current and future task force recommendations, while further aligning the HEC and BEC data sharing efforts, to streamline information sharing across the DOD and VA for the delivery of benefits and health care.	Integrated Information Sharing	JSP6.1
n/a	(2) Explore other opportunities in support of SOC decisions to leverage data and information in developing a tracking application to support an end-to-end process management for seriously injured service-members and service-members going through the disability evaluation process while transitioning from active duty status to veteran status.	Integrated Information Sharing	JSP6.2
Sep. 30, 2008	(3) Complete the implementation of the Identity Management Common Military Population Strategy and Work Plan in order to begin facilitating unique identification, access management, and on-line self service which will assist the delivery of benefits to service-members and veterans as well as the management of patients in DOD/VA shared medical facilities by September 30, 2008.	Integrated Information Sharing	JSP6.3

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TABLE TIMELINE 6: JOINT STRATEGIC PLAN (JSP) TASK (CONTINUED)

DEPLOYMENT	JOINT STRATEGIC PLAN (JSP) TASK	JSP PROJECT	JSP ID
n/a	(4) Continue expanding and developing shared service-member/veteran-centric strategies for DOD and VA web portals leveraging Defense Knowledge Online (DKO) and Army Knowledge Online (AKO) solutions, and develop service-oriented architectures for enhancing services and benefits in both Departments.	Integrated Information Sharing	JSP6.4
Sep. 30, 2008	(5) Reduction in the number of distinct personnel data exchanges between VA and DOD to one from DOD and one from VA by September 30, 2008.	Integrated Information Sharing	JSP6.5
Sep. 30, 2008	The DOD/VA HAIG will examine the activities in the VA and DOD health architectures that further evolve the areas of provision of health care delivery.	Integrated Information Sharing	JSP7
Jun. 30, 2008	(1) Define, analyze and report to the HEC IM/IT Working Group on VA and DOD health architectural models and specific components that support the shared health architecture in such areas as: • Case Management by June 30, 2008; • Disability Determination by June 30, 2008; and • Health Continuity of Care for our wounded warriors by June 30, 2008.	Integrated Information Sharing	JSP7.1
Jun. 30, 2008	(2) Identify, analyze and report to the HEC IM/IT Working Group on DOD and VA common services framework to facilitate the secure use of shared architectures by June 30, 2008.	Integrated Information Sharing	JSP7.2
Sep. 30, 2008	(3) Define version 1 of a Joint Common Services Framework by September 30, 2008.	Integrated Information Sharing	JSP7.3
Sep. 30, 2008	Facilitate the adoption of Health Information Technology (HIT) standards for greater interoperability between health systems. VA and DOD will exhibit leadership in the national and Government-wide HIT standards harmonization and implementation arena by participating in the development of health standards, and when mature and available, jointly utilizing health information technology systems and products that meet recognized interoperability standards.	Integrated Information Sharing	JSP8
Sep. 30, 2008	(1) Review national HIT standards recommended for implementation by September 30, 2008 and as health information technology is implemented, acquired, or upgraded, jointly utilize, when available, health information technology systems and products that meet recognized interoperability standards.	Integrated Information Sharing	JSP8.1
Sep. 30, 2008	(2) Report to the HEC IM/IT Working Group on incorporating recognized interoperability standards into targeted DOD and VA shared technology profile(s), by September 30, 2008.	Integrated Information Sharing	JSP8.2

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TABLE TIMELINE 6: JOINT STRATEGIC PLAN (JSP) TASK (CONTINUED)

DEPLOYMENT	JOINT STRATEGIC PLAN (JSP) TASK	JSP PROJECT	JSP ID
Sep. 30, 2008	Enhance the effectiveness and efficiency of VA access to the electronic health data on separating and separated Military members, and VA and DOD access to electronic health information on shared patients, and support the health IT requirements in the President's Commission on Care for America's Returning Wounded Warriors report. The HEC IM/IT Working Group will continue sharing electronic health information at the time of a service-member's separation, while maintaining appropriate security, and support the electronic bidirectional sharing of health information in real-time for shared patients between VA and DOD which will meet the President's Commission requirements for making all essential health data viewable within twelve months.	Integrated Information Sharing	JSP9
Sep. 30, 2008	(1) In coordination with JSP Strategy 4.1(3), VA and DOD will continue to work with the Defense Manpower Data Center (DMDC), Defense Enrollment Eligibility Reporting System (DEERS) to ensure VA patients treated in DOD facilities have DOD Electronic Data Interchange Person Numbers (EDI_PN_IDS) to facilitate matching patients and sharing electronic health information on shared patients by September 30, 2008.	Integrated Information Sharing	JSP9.1
Oct. 31, 2007	(2) Begin providing viewable patient health data from theaters of operation to DOD and VA providers on shared patients at fixed facilities to include theater inpatient notes, outpatient encounters, and ancillary clinical data, such as pharmacy data, allergies, laboratory results, and radiology reports by October 31, 2007.	Integrated Information Sharing	JSP9.2
Dec. 31, 2007	(3) VA and DOD will be able to share viewable ambulatory encounters/clinical notes, procedures, and problem lists in real-time and bidirectional for shared patients among all sites by December 31, 2007.	Integrated Information Sharing	JSP9.3
Feb. 29, 2008	(4) Begin development of business processes, business rules and requirements validation to automate activation of active dual consumer patients by February 29, 2008.	Integrated Information Sharing	JSP9.4
Jun. 30, 2008	(5) VA and DOD will be able to share viewable vital signs data in real-time and bidirectional for shared patients among all sites by June 30, 2008.	Integrated Information Sharing	JSP9.5
Sep. 30, 2008	(6) Implement the automated activation of active dual consumer patient capability by September 30, 2008.	Integrated Information Sharing	JSP9.6
Sep. 30, 2008	(7) VA and DOD will be able to share viewable family history/social history/other history, questionnaires and forms in real-time and bidirectional for shared patients between all sites by September 30, 2008—pending funding for both VA and DOD to begin work.	Integrated Information Sharing	JSP9.7
Sep. 30, 2008	The HEC IM/IT Working Group will support an approach for developing a common DOD and VA inpatient information technology capability.	Integrated Information Sharing	JSP10

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TABLE TIMELINE 6: JOINT STRATEGIC PLAN (JSP) TASK (CONTINUED)

DEPLOYMENT	JOINT STRATEGIC PLAN (JSP) TASK	JSP PROJECT	JSP ID
Jun. 30, 2008	(1) DOD will begin sharing viewable discharge summaries from Landstuhl Regional Medical Center with the VA providers on shared patients by June 30, 2008.	Integrated Information Sharing	JSP10.1
Jun. 30, 2008	(2) VA/DOD will define which inpatient data is required to be shared between DOD and VA on shared patients for clinical use as historical reference of a previous inpatient admission by June 30, 2008.	Integrated Information Sharing	JSP10.2
Jun. 30, 2008	(3) VA/DOD will define which inpatient data is required to share between DoD and VA for clinical use for an inpatient to inpatient inter-Departmental transfer of a shared patient by June 30, 2008.	Integrated Information Sharing	JSP10.3
Jun. 30, 2008	(4) VA/DOD will define Department-unique and Joint Inpatient Electronic Health Record functional requirements for potential joint application as identified in an operational model (business architecture) at a level sufficient to support subsequent Analysis of Alternative efforts by June 30, 2008.	Integrated Information Sharing	JSP10.4
Sep. 30, 2008	(5) VA/DOD will provide a report on the Analysis of Alternatives and recommendations for the development and/or procurement of a Joint VA/DOD Inpatient Electronic Health Record by September 30, 2008.	Integrated Information Sharing	JSP10.5
Oct. 31, 2008	The HEC IM/IT Working Group will support the electronic sharing of images for shared VA/DOD patients.	Integrated Information Sharing	JSP11
n/a	(1) DOD will report annually to the HEC IM/IT Working Group on plans to leverage the code in the VA's Imaging System Viewer to support digital imaging within the Military Health System (MHS).	Integrated Information Sharing	JSP11.1
Jun. 30, 2008	(2) VA/DOD will develop a plan to leverage lessons learned and knowledge gained from the National Defense Authorization Act (NDAA) demonstration projects in El Paso, Texas in conducting a bidirectional pilot test of digital image sharing between six DOD and five VA sites, pending the availability of funds, by June 30, 2008.	Integrated Information Sharing	JSP11.2
Oct. 31, 2008	(3) VA and DOD will develop a plan for interagency sharing of essential health images (e.g., radiology studies) between VA and DOD by October 31, 2008.	Integrated Information Sharing	JSP11.3
Jun. 30, 2009	VA/DOD will foster secure computing and communications infrastructure for electronic patient data sharing. The HEC IM/IT Working Group will facilitate the development and implementation of a trusted network security and communications partnership in support of electronic health data sharing.	Integrated Information Sharing	JSP12
Mar. 31, 2008	(1) VA/DOD will conduct a map and gap analysis of network security and communications policies which impact the secure transmission of health data between the Departments by March 31, 2008.	Integrated Information Sharing	JSP12.1

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TABLE TIMELINE 6: JOINT STRATEGIC PLAN (JSP) TASK (CONTINUED)

DEPLOYMENT	JOINT STRATEGIC PLAN (JSP) TASK	JSP PROJECT	JSP ID
Jun. 30, 2008	(2) VA/DOD will brief the HEC IM/IT Working Group on draft recommendations to influence or change network security and communications policies by June 30, 2008. Where applicable, recommendations will be made to the Department of Commerce/National Institute of Standards and Technology (NIST), The Office of Management & Budget (OMB), and the Department of Health and Human Services for proposed incorporation of findings into Government-wide policy and implementation of policy.	Integrated Information Sharing	JSP12.2
Sep. 30, 2008	(3) VA/DOD will draft a trusted network security and communications partnership implementation plan for consideration by Office of the Secretary of Defense (OSD) Networks and Information Integration (NII) and VA Office of Cyber Security by September 30, 2008.	Integrated Information Sharing	JSP12.3
Jun. 30, 2009	(4) VA/DOD will implement a secure network to support health data exchange and provide redundancy by June 30, 2009.	Integrated Information Sharing	JSP12.4
Dec. 30, 2009	In alignment with and in support of the Office of the National Coordinator (ONC) Nationwide Health Information Network (NHIN) initiative, VA and DOD will study infrastructure interoperability with commercial health care providers to foster infrastructure interoperability that would be accomplished through participating in NHIN Connect Federal Consortium. VA and DOD will submit a White Paper to ONC summarizing the results of the study by December 30, 2009.	Integrated Information Sharing	JSP13
Mar. 31, 2009	(1) Begin an in-depth analysis to identify communications data sharing requirements among managed care support contractors, the VA and DOD by March 31, 2009.	Integrated Information Sharing	JSP13.1
Jan. 31, 2009	(2) Monitor the HITSP and HL7 for information on the maturity of electronic health record infrastructure, to include security standards, and report to the HEC IM/IT Working Group by January 31, 2009.	Integrated Information Sharing	JSP13.2

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