DoD/VA Information Interoperability Plan

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Executive Summary

1.0 Executive Summary

Great strides forward in the electronic sharing of benefits, personnel, and health information between Department of Defense (DoD) and Veterans Affairs (VA) have been accomplished during the past few years. DoD and VA are committed to continue to evolve and expand the appropriate sharing of health information to enhance care delivery and continuity of care for shared patients. In fact, current health information exchange capabilities between the Departments are well ahead of those in the private sector both in scope and scale. Today, this shared information supports the delivery of high-quality healthcare and the administration of benefits to our Nation's Service members and veterans. However, recent challenges related to the provision of effective administrative and benefits-related support of wounded warriors have emphasized the need to close remaining gaps in information sharing not only across the two Departments but also with each Department's partners in the private sector.

Information technology can not by itself solve various quality, coordination, and efficiency problems. Underlying organizational processes must be improved first, or information technology merely perpetuates the old processes. Understanding the organizational needs, standard, defined processes which the organization utilizes, and simplifying those processes is the first priority. Subsequently, information technology serves as an enabler and supports the organization's improved business processes.

This Information Interoperability Plan (IIP) identifies more than 20 initiatives that close the remaining gaps in information sharing and allows us to achieve the shared vision of information interoperability. Extensive discussion and analysis in the two Departments, among healthcare providers have concluded that all information essential to the delivery of quality care is currently being shared. There are a number of areas where improvements are desired to facilitate integration into workflow and simplify access to the information. Additionally, better ensuring that this information is available to support administrative processes and benefits determination is key to improving the quality of life of our Service members and veterans. These areas of desired improvement constitute the initiatives set forth in this plan.

As this document is formed from a recent, comprehensive analysis of inter-departmental information sharing needs, not all defined initiatives are currently funded programs. Independent of resourcing constraints, implementation target milestones are identified based upon their expected value as determined by the functional communities and the feasibility of their implementation.

This plan has been approved by the Line of Action (LOA) #4 co-leads, submitted to the Wounded, Ill, and Injured Senior Oversight Committee's Overarching Integrated Product Team (OIPT), and subsequently its implementation will be overseen by the DoD and VA governance structure of the Joint Executive Council (JEC), Benefits Executive Council (BEC), and the Health Executive Council (HEC). This plan serves as the strategic organizing framework for current and future work, to set the scope and milestones necessary to measure progress toward intermediate goals and a target state needed to continuously improve service to veterans and members of the armed forces.

Given that it is necessary to prioritize the expenditure of resources, it is critical that information sharing be driven by the needs of the clinical and business users of the information systems, that those needs be expressed in terms of a problem orientation, and that the most urgent needs be given the highest priority. This plan addresses those priorities. As DoD and VA continue to improve their information systems, it will be important to ensure that DoD and VA information sharing capabilities are required as critical features of any major system changes. However, it is not reasonable to delay DoD and VA information sharing initiatives in anticipation of any such enhancements. We must continue to make incremental improvements in our sharing. In fact, our near term success will be measured in incremental improvements in information interoperability rather than in one major implementation of information technology (IT) product. Even in the event of a one year unconstrained budget, that is funding were removed as a constraint, the incremental evolution of information sharing capabilities is better suited to accommodate changes in information needs and information technology, as well as the accompanying workforce training.

Vigilance, persistence, consistency of purpose, and the close engagement of governing bodies, functional user community, and technical advisory groups are critical to staying on the interoperability path and bridging the gap in capability needs for continuity of care and benefits administration. Application of continuous process improvement methodologies ensures use of defined processes to successfully develop integrated plans and teams to manage dependencies and coordinate integration. As stakeholders' needs, technology, business practices, and standards evolve; this plan will be reviewed and updated as needed to incorporate substantive changes in strategy yet holding true to the planning framework and information management best practices.

2.0 Introduction

Most of us have experienced the frustration of lack of interoperability—information can't be exchanged, connections can't be made, valuable time and opportunities are lost. Information interoperability continues to be a challenge facing not only DoD and VA, but also the Nation's healthcare delivery system at large. Organizations striving for information interoperability must address the need to share information across autonomous organizations, cope with continuous change in healthcare processes and information technology, manage the legacy systems, and maintain a robust communications and computing infrastructure. The two Departments have collaborated to develop this Information Interoperability Plan (IIP). The IIP recognizes the importance of sharing information among DoD, VA, and its private sector partners, as both Departments rely upon the private sector to deliver healthcare to its beneficiaries.

> ***"Within 12 months, in order to implement our Recovery Plan recommendation, DoD and VA must make patient data much more accessible—to begin with, in viewable form."***
> ***-- Dole/Shalala Report July 2007***

DoD and VA need to continue to exchange information among their evolving systems to provide timely administration of veterans' benefits and continuity of care. This plan serves as the strategic organizing framework for current and future information technology projects and information needs. It defines an interoperability maturation continuum which recognizes that information does not always need to be exchanged at the highest level of interoperability to be of value. Information in a text or scanned format and viewable by users may meet the need. The Plan sets the scope and milestones necessary to achieve and measure progress toward intermediate goals. Additionally, it establishes a target-state needed to continuously improve service to the veterans, members of the armed forces, and their families. This plan is intended to guide leadership's information technology investment decisions and help to establish a shared understanding of interoperability barriers, enablers, principles, and practices. The Plan's execution will be overseen by the Joint Executive Council (JEC) and updated as requirements evolve.

3.0 Purpose

The purpose of the IIP is to guide leadership, policy makers, and information management and technology personnel in achieving the shared vision for DoD and VA health, personnel, and benefits information interoperability. The IIP discusses issues and opportunities for interoperability: what it involves, why we should care about it, and how it can be achieved. It explains the benefits for stakeholders, identifies the main issues that

lie on the road to achievement, and provides an initiative-focused, problem-oriented, phased implementation schedule. However, not all initiatives described in this plan are funded. The IIP specifically:

- Defines VA and DoD strategic interoperability maturation and organizing framework;
- Maps the current and future health, administrative, and benefit information sharing through a problem-oriented approach to establish an interoperability roadmap;
- Identifies information capability gaps to guide future investment portfolio decisions, prioritization of initiatives, and influence information technology (IT) design solutions;
- Sets milestones to measure progress of near-, mid-, and long-term interoperability goals; and
- Leverages the national standardization activities led by the Department of Health and Human Services to foster health information sharing with the private sector.

4.0 Our Shared Vision

Information Interoperability is a means to achieving our shared vision:

"Information is valued and managed appropriately as a resource to enable informed, collaborative decision making and enhanced responsiveness to requests for information in a timely and secure manner."

5.0 Interoperability Defined

Although the concept of information interoperability is widely accepted as being very difficult to achieve there is less agreement on the definition of the term information interoperability. The term is often described in very technical jargon without an emphasis on achieving the sought organizational outcomes, having lost sight of the reason for seeking information interoperability that is to improve benefits administration and continuity of care for the DoD and VA beneficiaries. Within this plan, DoD and VA have agreed to use the following definition, which focuses on the desired outcome of information interoperability, that is, a mutual understanding of shared information.

"The ability of users to equally interpret (understand) unstructured or structured information which is shared (exchanged) between them in electronic form."

Acknowledging that several levels of interoperability exist, the two Departments adopted the Center for Information Technology Leadership (CITL) Standardization Levels as a classification framework to define interoperability targets across information areas. The CITL framework outlines four levels reflecting the amount of human involvement required, the sophistication of IT, and the level of standardization for effective information sharing. The lowest level of standardization is defined as non-electronic data or no use of IT. Level 4 the highest level, is defined as machine-interpretable data or transmission of structured messages containing standardized and coded data. Level 4 is viewed as an idealized state with all systems using the same formats and vocabularies. Use of the framework does not imply that all information is needed at Level 4, nor is Level 4 achievable in all circumstances. Analysis by informaticists in the development of this plan determined that most information sharing between the Departments today occurs at Level 3 and supports the provision and continuity of care as well as the administration of benefits. Appendix A includes an overview description of the CITL framework. For more information on CITL, visit their website at http://www.citl.org/.

6.0 Guiding Principles and Goals

The IIP was developed consistent with the guiding principles of the VA/DoD Joint Strategic Plan (JSP): collaboration, stewardship, and leadership.

- Collaboration: achieve shared goals through mutual support of our common and unique mission requirements.
- Stewardship: provide the best value for the beneficiaries and the taxpayer through increased coordination.
- Leadership: establish clear policies and guidelines for enhanced partnerships, resource sharing, decision making, and accountability.

The IIP builds upon the JSP's partnership and resource sharing focus and further develops strategies for managing information as a strategic resource, acknowledging the reliance of effective and efficient administration of veterans' benefits and delivery of healthcare on information availability, timeliness, completeness, and accuracy when needed.

To achieve our shared vision of information interoperability, the two Departments agreed to the following four goals. These goals are to:

- Goal 1: Facilitate the continuity of high quality healthcare across private and public health communities with robust IT solutions that incorporate privacy and security protections;

- Goal 2: Provide effective IT support for seamless coordination of appropriate and timely benefits;

- Goal 3: Provide the enabling, cross-cutting infrastructure to support global and joint information interoperability; and

- Goal 4: Provide effective IT support to population health and clinical research.

Existing outstanding information needs impede the achievement of our shared vision and goals. This plan defines an implementation roadmap of phased initiatives to close the information gaps needed to ensure continuity of care and timely benefits administration for DoD and VA beneficiaries. Since not all initiatives described in this plan are funded, this plan is intended to influence leadership's decision making process for funding the IT portfolio.

7.0 The Current Environment - Achievements to Date

To plot the future course requires an understanding of the current environment of shared information, adopted standards, and the current governing structure.

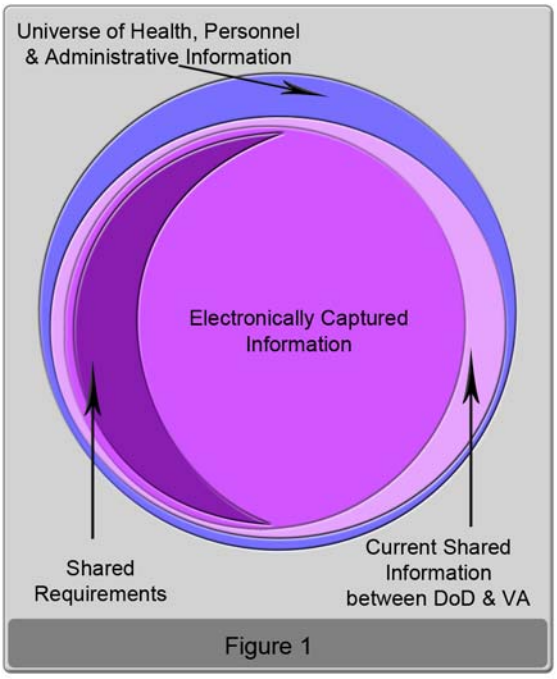


Figure 1

7.1 Shared Information

While there has been growth in the sharing of electronic information between DoD and VA over the past few years, some administrative and healthcare information continues to be available only in non-electronic formats. Figure 1 shows the relationship of the two Departments' information needs. The graphic illustrates that, given the Departments' mission, not all the information available to each Department is a shared requirement. Of the shared information requirement, not all information is available in an electronic format. Finally not all of the information captured electronically between the Departments needs to be shared, but most that does need to be shared is being shared today. Although both Departments have used computer systems to automate administrative and healthcare

functions for many years and have electronic health records, widespread adoption of electronic health records does not exist in the private sector. Increasing our information sharing in consonance with national standards will provide future opportunities for information sharing with our private sector partners. As more information is captured electronically, there are greater opportunities to share the information without the accompanying inefficient and less effective manual processes.

Today, most information that is captured electronically and necessary for continuity of care and benefits administration is being shared. This plan identifies the remaining work to be done to electronically capture and transmit information that is understood at the level of interoperability necessary for ensuring organizational effectiveness and to provide an individual with a viewable format or by a computer in a structured format, using agreed to standards.

Since 2000, DoD and VA have electronically shared information. This initial sharing was primarily supporting personnel and administrative needs. Soon to follow was a periodic sharing of historical veterans' data from DoD to VA with the priorities for the information needs generally determined by DoD and VA healthcare providers for the purposes of continuity of care. Since the sources of the shared information were legacy systems, the information was typically viewable rather than computable, as there was no agreement to terms or vocabulary sufficient for system-to-system interpretation of the information. The information was primarily text and did not include images. In some instances, the shared information was available only to specific sites with known requirements for the information, for example, a shared patient population between healthcare facilities. Appendix B provides more detail on the information being shared today across the four levels of interoperability.

The accomplishments have built a strong foundation for information interoperability needed to achieve our shared vision. Step-by-step, the two Departments have broadened the scope of the information being shared; addressing not only benefits administration information needs, but also those of continuity of care. Rather than a tactical, limited site-by-site implementation perspective, the two Departments are seeking strategic, enterprise-wide information interoperability solutions. Opportunities arise today as legacy systems are upgraded or replaced and interoperability standards are adopted to increase the capture of electronic information and shared computable data.

7.2 Shared Standards Adoption

Across the nation standards are neither completely defined nor implemented with respect to supporting the continuity of healthcare between different healthcare systems. The

government has acknowledged a role in influencing industry to adopt standards and develop products based on these standards. Both Departments are national leaders in these data standardization efforts, participating in Standards Development Organizations deliberations, and have developed a shared health standards profile that includes interoperability standards from the Healthcare Information Technology Standards Panel (HITSP) as recognized by the Secretary of Health and Human Services. Today the data standardization efforts reside under the umbrella of the American Health Information Community which recently approved an initial set of standards. Both Departments have developed implementation strategies for these approved standards and this plan will leverage that planning effort in implementing the IIP's initiatives. In addition DoD and VA collaborative efforts with Health and Human Services (HHS) on the Nationwide Health Information Network (NHIN) are underway but not yet fully designed. Neither the existing implementation of standards nor the NHIN alone will bring about information interoperability; however, their implementation will facilitate information sharing between the two Departments and the private sector, including private sector healthcare delivery systems. Table 1 shows the dimensions of the evolution of information sharing between the Departments.

Beginning	Today
Focus on administrative information needs	Focus on continuity of care and benefits administration
Viewable text	Viewable text, images and computable data
Historical data with monthly updates	Current information
Local Site-by-Site sharing	Enterprise-wide availability of the data
Separated veterans' data	Active duty, veterans', and shared beneficiaries data
One-Way Exchange	Two-Way Exchange

Table 1

7.3 Governance Structure

The two Departments have a formal governance council structure to oversee development of policy and support DoD and VA joint initiatives and resource sharing, including information sharing. The JEC is co-chaired by the Deputy Secretary of VA, and the DoD Under Secretary for Personnel and Readiness. The JEC is the overarching council, and links the two supporting councils: the HEC and the BEC. The councils use the JSP as their guide for the implementation of the goals and objectives related to sharing and improving care and benefits administration to beneficiaries. Key stakeholder input in the

clinical information domain is received from subject matter experts forming the Joint Clinical Information Board (JCIB) while information sharing requirements regarding military and veterans' benefits comes from subject matter experts in the benefits and personnel communities. These recommendations are forward through the governance structure for approval and execution oversight.

A Wounded, Ill, and Injured SOC was recently formed as an ad hoc task force to specifically address the many different recommendations and actions given to the DoD and the VA by the Government Accountability Office, the Veterans Disability Benefits Commission, the Independent Review Group's Report, the DoD Task Force on Mental Health, the President's Commission on Care for America's Returning Wounded Warriors, and the National Defense Authorization Act for Fiscal Year 2008. The SOC, which is co-chaired by Deputy Secretary of Defense and Deputy Secretary of VA, works in concert with the goals of the councils. It is anticipated that the SOC will transition their work to the JEC or other executive level councils and that oversight of the implementation of this IIP will be managed through the HEC and the BEC, in turn guided by the JEC.

8.0 Bridging the Gap – A Problem-Oriented Approach to Solving Interoperability

The two Departments chose to follow a problem-oriented approach for assessing their previous information sharing strategies and for identifying the remaining gap to achieve the agreed to goals for information interoperability. Given that it is necessary to prioritize the expenditure of resources, it is critical that information sharing be driven by the needs of the clinical and business users of the information systems, that those needs be expressed in terms of a problem orientation, and that the most urgent needs be given the highest priority.

A major driver for information interoperability is to ensure that the information on wounded warriors is available for the purposes of timely benefits administration and continuity of care whether in DoD, VA, or the private sector. After a comprehensive review of recent Commission and Presidential Task Force reports, key clinical issues facing our veterans from recent conflicts have been identified as: burns, traumatic brain injury, vision and hearing loss, multi-amputation, and post-traumatic stress disorder. Benefits administrators and healthcare providers identified information gaps by comparing the electronically available information against the information needed to determine benefits as well as to treat the common problems presented by returning wounded warriors.

Subsequent to validation of both health and administrative information gaps, a roadmap of IT initiatives was developed to "bridge the gap" with phased implementation across multiple years. Generally, the initiatives' information interoperability milestones emphasize the sharing of electronically available information at the CITL Level 3 to ensure a more rapid expansion of support in achieving our sharing goals. The initiatives' implementation schedules were assessed by both the expected value of the information as well as the feasibility of implementation. In some circumstances the value of the information overrode the feasibility of implementation as the major driver for the implementation timeline. Guided by the health, personnel, and benefits communities, the IIP constructs the bridge across today's gap in information sharing and addresses the level of interoperability needed, whether in faxed, scanned, or computable formats.

9.0 What does this plan entail?

The scope of the IIP addresses the information needed to support strengthening the continuity of care provided our Service members and veterans and determining Service members' and veterans' benefits at multiple levels within the two Departments. The electronically available information required in support of delivery of healthcare and benefits determination is stored in the major DoD and VA systems. Appendix C shows a simplified view of the interactions among systems across a service member's life, including the requirements to interact with private sector organizations whether in administering benefits or delivering healthcare. As the two Departments partner with private sector organizations and need to share information with the private sector, the plan focuses on the implementation of solutions based on interoperability and standards rather than a focus on acquisition of the same product by both departments.

This IIP describes the various strategies DoD and VA will employ in bridging the interoperability gap and managing information as a strategic resource. Information interoperability is dependent upon strong management and protection of information across its lifecycle from collection, storage, access, use, maintenance and disposition. Figure 2 describes the components of strong information management to guide the implementation of IIP and ensure alignment with the agreed to principles and goals.

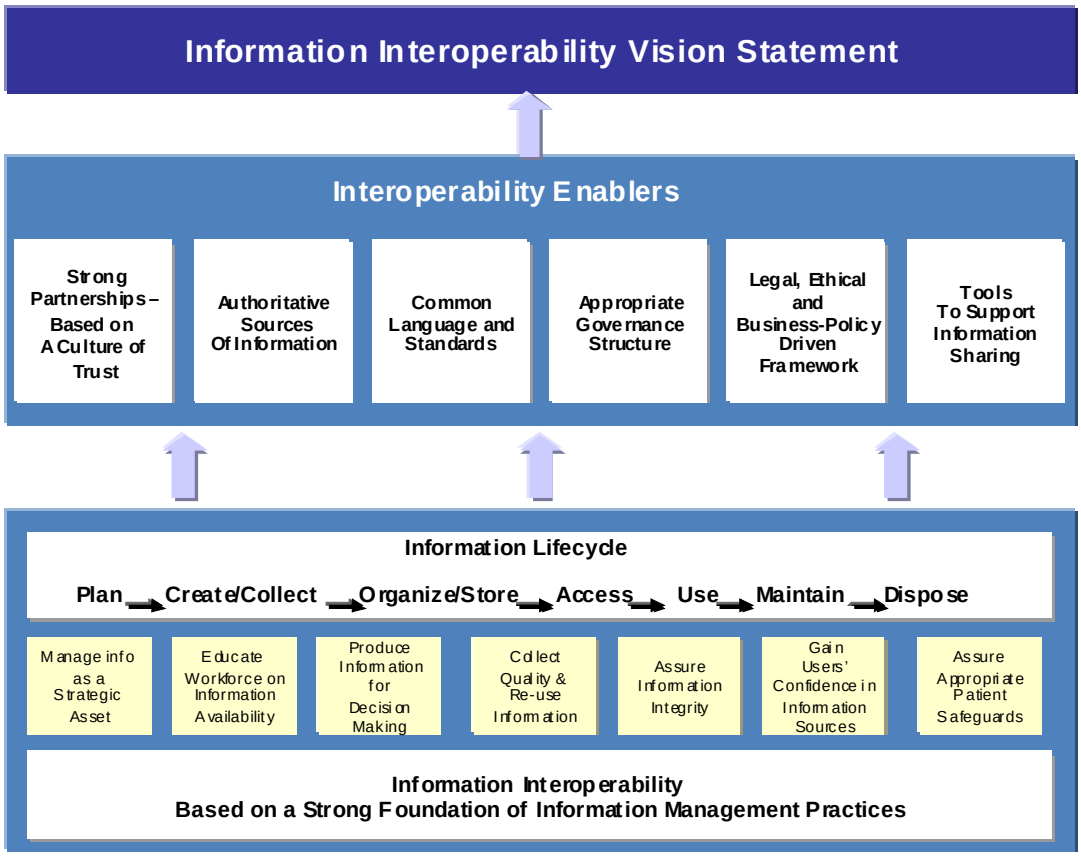


Figure 2

10.0 What is our Strategy?

To realize our shared vision of information interoperability the two Departments will leverage our current, robust information sharing programs and infrastructure to close remaining gaps in information coverage. We will expand upon existing initiatives and incrementally implement greater capabilities as determined by the health, benefits, and personnel communities and as technology advances. Information gaps identified as required for DoD and VA health and benefits management or lacking in coverage and/or timeliness, will be resolved through the execution of this plan. The completeness and timeliness of this information will be supported by an operational infrastructure that allows easy, timely access to relevant information for all levels stakeholders. Wherever possible, our solutions will leverage nationally recognized standards for health information sharing in an effort to ensure we do not create a sharing solution that will work between the DoD and VA but not with our private sector partners. Our initiatives address the current constraints relating to the implementation of interoperable systems:

- Incompatible legacy computing and communications infrastructure;
- Lack of full consideration of interagency data sharing in current DoD and VA architectures;
- Existing data in unstructured formats difficult to discover and access;
- Undefined standards and maturing standards that are neither implemented nor robust;
- Large amounts of existing data with limited documentation and non-standardized access mechanisms;
- Workforce insufficiently trained regarding available information;
- Shared information often not effectively integrated into the workflow of clinicians and administrators;
- Different levels of policy and governance that vary based on organizational culture required for information sharing;
- Resource availability, both manpower and dollars;
- Contracting and acquisition policies and vehicles; and
- Industry and market place divergence.

10.1 Initiatives and Goal Alignment

The initiatives that make up the pathway to information interoperability and the alignment to the Departments' goals are shown in Table 2. Appendix D provides a description and high level implementation timeline for each of the initiatives, pending appropriate funding and staffing by both Departments.

Initiatives to Achieve Our Shared Vision	Aligned to Information Interoperability Goals (refer to page 9)
Image Sharing	Goal 1- Continuity of Care
Inpatient Electronic Health Information	Goal 1- Continuity of Care
Reserve Component Access to Electronic Health Information	Goal 1- Continuity of Care
Enhancements to Health Information Exchange between Clinical Information Systems	Goal 1- Continuity of Care
Clinical Case Management	Goal 1- Continuity of Care
Psychological Health Treatment and Care Records	Goal 1- Continuity of Care
Immunizations Records and History	Goal 1- Continuity of Care
Integrated Personal Health Data with Patient Self-	Goal 1- Continuity of Care

Initiatives to Achieve Our Shared Vision	Aligned to Information Interoperability Goals (refer to page 9)
Assessment	
Nationwide Health Information Network	Goal 3- Infrastructure
Personalized Healthcare (Family History)	Goal 1- Continuity of Care
Interagency Program Office	All 4 Goals
Integration of Interagency Data Sharing into DoD and VA Architectures	Goal 3- Infrastructure
Trusted Partnership and Communication Infrastructure	Goal 3- Infrastructure
Exposure History (Environmental and Occupational Hazards)	Goal 1- Continuity of Care
Data Marts to support Clinical Research, Quality, and Population Health Management	Goal 4- Population Health and Research
Knowledge Sharing for Psychological Health and Traumatic Brain Injury	Goal 4- Population Health and Research
e-Benefits Portal	Goal 2- Benefits
Disability Evaluation System	Goal 2- Benefits
Non-Clinical Case Management	Goal 2- Benefits
Pay Systems Enhancements	Goal 2- Benefits
Identity Management	Goal 1- Continuity of Care and Goal 3 – Benefits
Federal Health Center Information Technology Support	Goal 1- Continuity of Care

Table 2: Mapping Information Interoperability Initiatives to Goals

10.2 Quality and Quantity Aspects

Our strategy considers more than the content of information needed; just as critical is a mutual understanding of the quality and quantity of information flows. Some important quality requirements for each of the initiatives are:

- ***Timeliness:*** *How current does the information need to be? How frequently and quickly should changes be distributed? When does the information need to be updated?*
- ***Usability:*** *To what degree does the presentation of the information enhance workflow and clinical processes, facilitate navigation to information required, and display in a way that promotes consistent, unambiguous interpretation?*
- ***Privacy and confidentiality:*** *How has health information been protected according to professional and ethical standards?*
- ***Security:*** *To what extent should information be protected from being seen by unauthorized users?*
- ***Availability:*** *How assured can users be that they always have specific information at their disposal?*

- ***Non-repudiation:*** *To what degree is the source of information assured?*
- ***Assured delivery****: To what certainty should information arrive at its intended destination?*
- ***Integrity:*** *To what degree of certainty that information has not been changed without knowing?*
- ***Customer:*** *How do we objectively assess work products and services to ensure information truly meets customer needs?*

Two relevant quantity aspects are:

- ***Frequency of exchange****: How often will certain information be exchanged between two systems?*
- ***Amount of data:*** *How much data (megabytes) will be exchanged on average?*

The required quality and quantity depends on the situation, for example whether it is for continuity of care or benefits determination. For instance, real-time tracking of aeromedical evacuation/transport information (locations of patients) changes very frequently and needs to be disseminated quickly. This implies that air tracking data should be compact to allow for physical limitations to network bandwidth and computer processing power. Regardless, for each of the initiatives the content of the information as well as the quality and quantity requirements for the information flows are critical aspects to bridge the gap of information interoperability.

11.0 What are the barriers to success?

As DoD and VA modernize their information systems, there may well be significant changes in or replacement of some or all of the components of that system. It will be critically important to mandate DoD and VA information sharing as a critical feature of any major system changes. However, it is not reasonable to delay DoD and VA information sharing initiatives in anticipation of any such enhancements. We must continue to make incremental improvements in our sharing. In fact, our near term success will be measured in increments rather than in one major implementation of tools and capabilities. DoD and VA will likely continue to experience a range of information interoperability issues, some intrinsic to the current way of doing business, others arising as a result of technology, and yet others from a workforce not yet fully trained regarding the value of information and its management. This IIP will help to provide an awareness of the barriers to achieving information interoperability and defines a roadmap that overcomes them. Barriers to achieving information interoperability include the following:

- Agencies may be concerned about the quality or misuse (inadvertent or otherwise) of information. There may also be doubts about the completeness and currency of

the information. They may fear that information collected for a specific purpose may be inappropriately used due to, for example, mismatch in lexicon, definitions, or terms. Alternatively, information users may not understand the purpose or context in which the information was collected or the information provided may be incomplete.

- Agencies may overlook essential ethical values of privacy and confidentially leading to both the loss of public trust concerning the security and privacy of electronic data and the erosion of the healthcare mission.
- Agencies may restrict access to information in order to fulfil legal requirements around privacy or confidentiality which may limit the sharing of complete information. An incomplete understanding of legal obligations can result in agencies limiting access to its information.
- If systems and infrastructure have not been designed to provide easy and flexible access, the cost of sharing information may be prohibitive. The investment costs to upgrade legacy systems and infrastructure to "evolving" standards are substantial.
- Cultural and ownership perceptions may cause hesitation in investing in a cross-agency project that does not appear to address direct agency priorities, that appears to benefit one agency over another, that may reduces control or autonomy of an agency, that may increases an agency's costs, or simply because of lack of trust at the technology, business process, and workforce levels.
- Existing data collections are often underused and unknown. We need to ensure efficient use of data to maximize value from existing data assets rather than commence new specific information collection activities without knowing about relevant holdings.
- Many contemporary approaches available to bridge the interoperability gaps including the adoption of common systems or standards, harmonization of business processes, and use of single authoritative data sources have not yet been fully embraced. Absent a stronger focus on greater use of common services and leveraging joint architectural elements where compatible with Departmental missions, our ability to respond to joint requirements in an efficient manner will be suboptimal.

Although not perceived as a barrier, reaching consensus on information requirements is a complex undertaking requiring a skilled workforce. Information analysis requires close cooperation between domain experts and information technologists. Often the information requirements may appear rather unclear and complex which makes clarifying and structuring an intensive and time-consuming effort. Restraint is needed to preclude leaping to a technical solution without adequate requirements definition this only leads to delivery of a product that does not meet user needs and wastes time and resources. All

parties must recognize that it takes a lot of patience and understanding to get a complete and unambiguous picture of a certain problem area or unmet capability.

12.0 How can we put this strategy into effect?

To fully achieve our shared vision of information interoperability will require actions and involvement by leadership, management, and the workforce. Appendix E is our joint response to the establishment of Interagency Program Office as first step. Other initial steps will include engaging the leadership to address these immediate actions:

- Identify legislation and policy which impacts information interoperability;
- Create policy designed to promote external use of information in a way that complies with legal and policy obligations;
- Educate the workforce on legal and policy obligations, information management best practices, and the restrictions on information use;
- Compare existing IT and business practices against the enablers identified in the IIP;
- Develop a funded IT portfolio that includes the initiatives described in this IIP;
- Document and publish conditions on the access and use of information ensuring privacy protections are implemented; and
- Modify systems and/or system interfaces to implement information sharing enhancements making course corrections as needed.

Our success will be dependent upon our collective ability to ensure that all information is reliably, promptly, and easily but securely available whenever and wherever needed by providers, patients, and administrators. Feedback from our users of this information is essential to determining whether our information sharing activities are meeting with success.

12.1 The Role of the Governing Bodies

The effective management of information, as well as the sharing of information across agencies requires strong transparent governance. This plan approved by the Line of Action #4 co-leads, will be implemented under the watchful eyes and guiding hands of the JEC, HEC, and BEC, as well as by their workgroups. These governing bodies will ensure progress is made in achieving information interoperability; that the IIP remains current, the information interoperability progress is reported widely, and information sharing is strengthened.

Different guidance and monitoring may be applicable depending upon the type of information being shared. But, regardless, a common guidance between the DoD and VA must be agreed to and applied in order to achieve information interoperability. As an example, the sharing of routine or de-identified data (that is, data that has had personal details removed) requires less governance than the sharing of highly sensitive personal information such as health data. The governing bodies may conduct their responsibilities by employing a variety of methods, including:

- Assigning responsibility for information interoperability to a senior executive;
- Incorporating information interoperability performance measures into the existing performance scorecards;
- Defining future years' IT portfolio guidance;
- Measuring compliance with the IIP and questioning any deviations;
- Requesting specific policy and practices be developed and employed for information management and interoperability;
- Promoting an environment that encourages employee participation in process improvement efforts as example to ensure all information technology supports the use of assistive technology and meets the Section 508 standards;
- Conducting appropriate audits and reviews, including financial plans and IT portfolios;
- Ensuring compliance with records management policy.

12.2 The Role of the Functional User Community

The functional user community has defined the needed capabilities to bridge the gap in information interoperability to better serve our veterans and members of the armed forces. As requirements work groups are stood up, the functional community will define

and prioritize the requirements of each of the initiatives that make up the roadmap to information interoperability. Functional users have a role in working in an integrated fashion with the technical community to ensure their requirements are translated into design solutions that will meet users' needs. They will also participate in the development of IT test plans and user testing activities to assess whether the technical solutions function in the expected manner prior to implementation approval. The user community has a responsibility to re-engineer business practices and workflow, as well as revise policy in order for implementation of new IT solutions to be successful. In their day-to-day activities, the user community has a large role in complying with procedures that protect the privacy and confidentiality of shared information. Lastly, as business practices change and future capability needs are identified, the functional community should ensure these needs are defined in the IIP updates and addressed in the IT investment portfolio decisions and future years' budgets.

12.3 The Role of Technical Community

The technical community will offer alternative technical solutions to meet information interoperability capability needs, incorporate emerging technologies, and protect privacy and confidentiality. They will highlight the significant cost drivers in technical alternatives, so that the functional community has the ability to make trade-off decisions. The technical community will conduct technical feasibility assessments to ensure the designs, products, and solutions will further interoperability and capture information in a way that promotes its reuse and comply with security requirements. By participating in industry standards development organizations deliberations, technical representatives will influence and leverage the standards definition, adoption, and implementation activities, promoting information interoperability across the private and public sectors.

13.0 What are the Critical Success Factors?

Since our success will be measured in incremental improvements in information interoperability rather than in one major implementation of an IT product. Accomplishing this systematic improvement in interoperability in the rapidly evolving environment of information exchanges requires vigilance, persistence, and consistency of purpose by all stakeholders. The continuing diligence of the governing bodies and the functional and technical communities are vital to bridging the remaining gaps in capability needs for continuity of care and benefits administration. Since the IIP lays out the roadmap and framework, therefore, it is imperative that IIP be routinely reviewed, updated as needed for substantive changes, used as a decision making guide, and its strategies be considered when policy, financial, and investment portfolio decisions are being deliberated, whether tactical or strategic in nature.

14.0 Appendices

APPENDIX A:

DoD and VA
Levels of Information Interoperability Framework

**Interoperability Levels*

Level 1: Non-electronic data (paper & phone calls)

Level 2: Machine transportable data (unindexed documents, fax, & email)

Level 3: Machine organizable data (indexed documents & images)

Level 4: Machine interpretable data (transfer of data from one system to another without need for further translation or interpretation)

Source: The Center for Information Technology at the National Institutes of Health

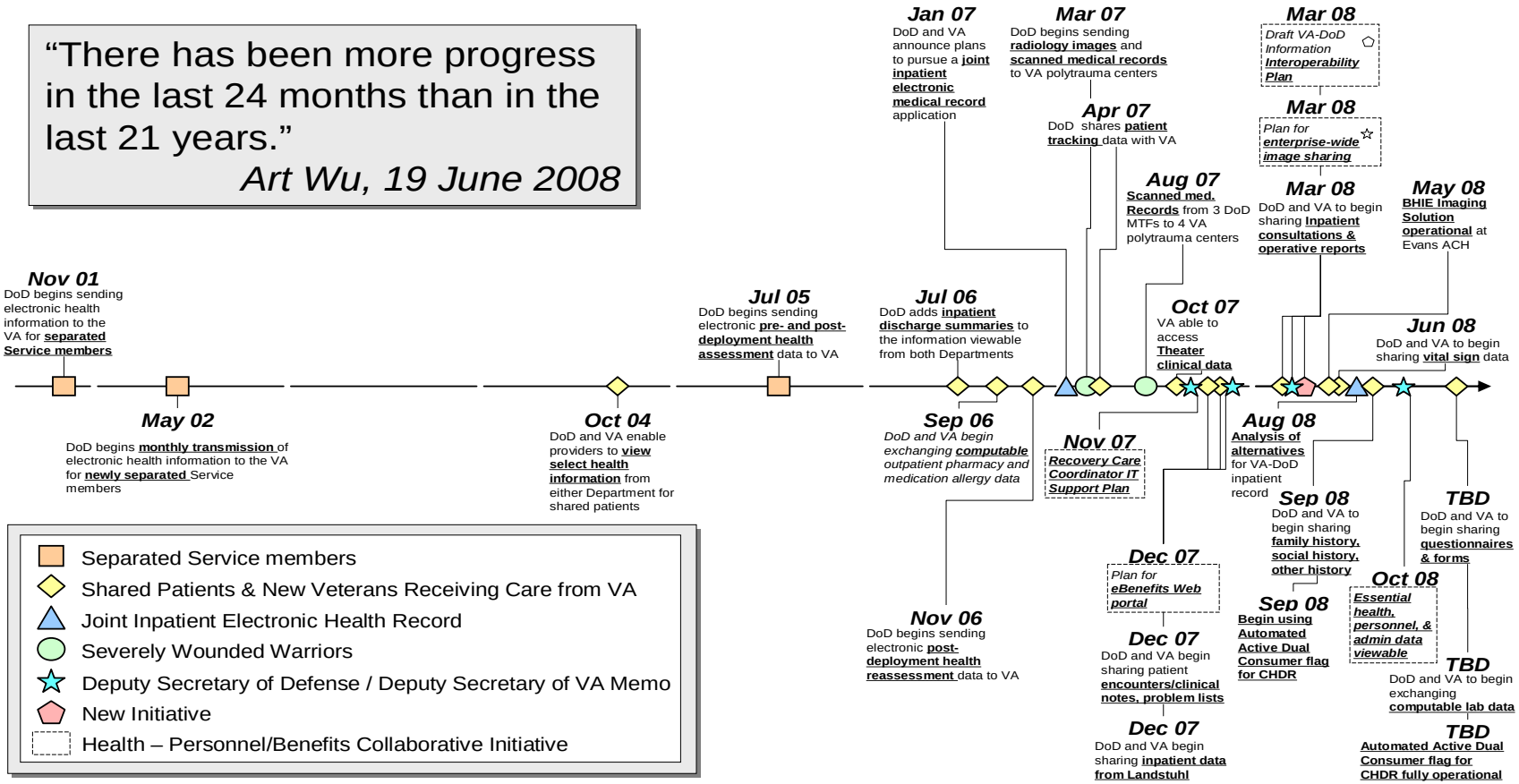
Level of Standardization
Center for Information Technology Leadership

Levels		
4	Machine-interpretable data	Transmission of structured messages containing standardized and coded data; system exchange information using the same formats and vocabularies
3	Machine-organizable data	Transmission of structured messages containing non-standardized data; requires interfaces that can translate incoming data from the sending organization's vocabulary; usually results in imperfect translations because of vocabularies' incompatibles levels of detail
2	Machine-transportable data	Transmission of non-standardized information via basic IT; information within the document cannot be electronically manipulated (e.g. scanned documents, pictures, PDF files)
1	Non-Electronic Data	No use of IT to share information

Waller Jan; Pan Eric; Johnston, Douglas; Adler-Milstein Julia, Bates David; and Middleton Blackford, "The Value of Health Care Information Exchange and Interoperability," dated 19 January, 2005

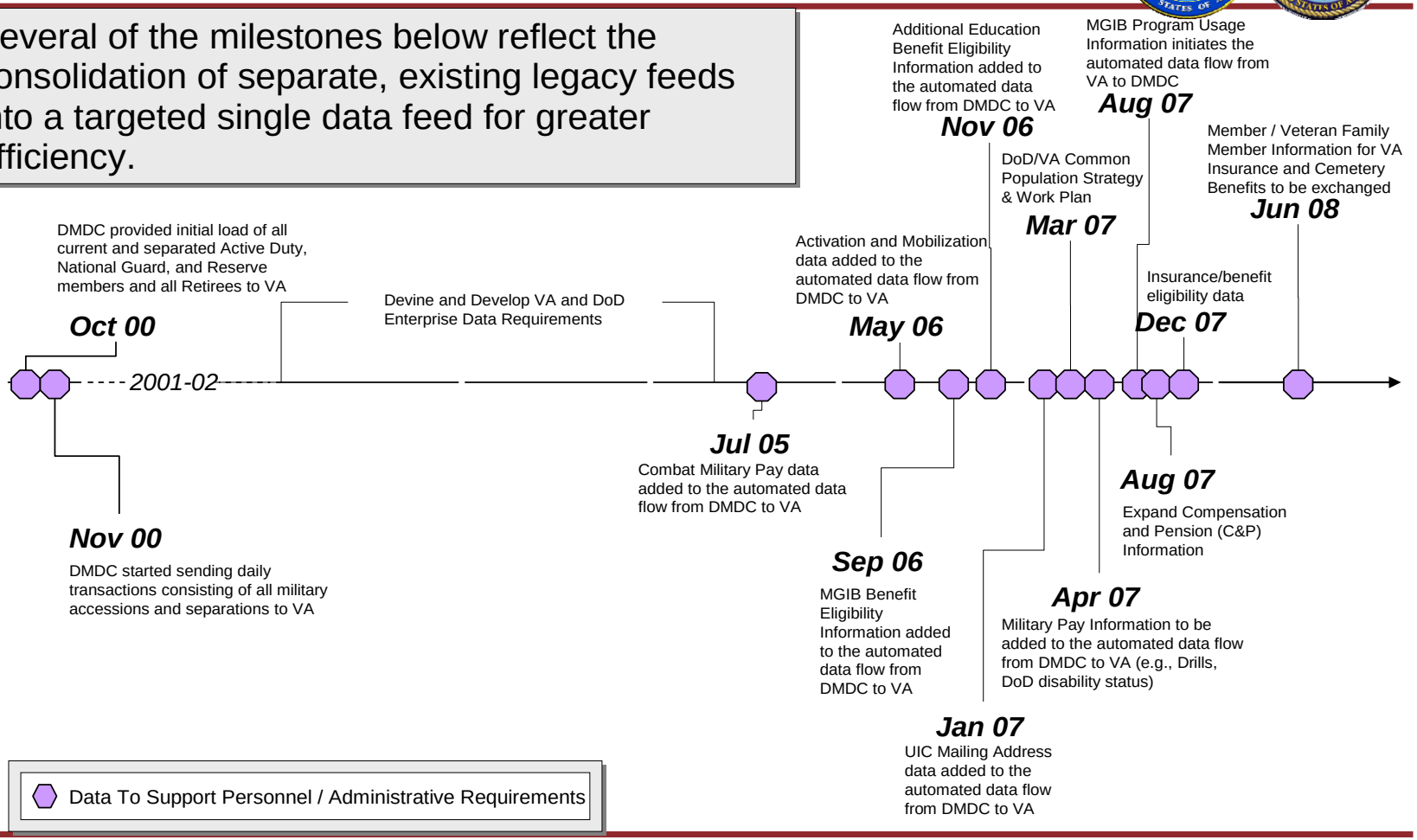
Milestones & Plans (Health)

"There has been more progress in the last 24 months than in the last 21 years."
Art Wu, 19 June 2008

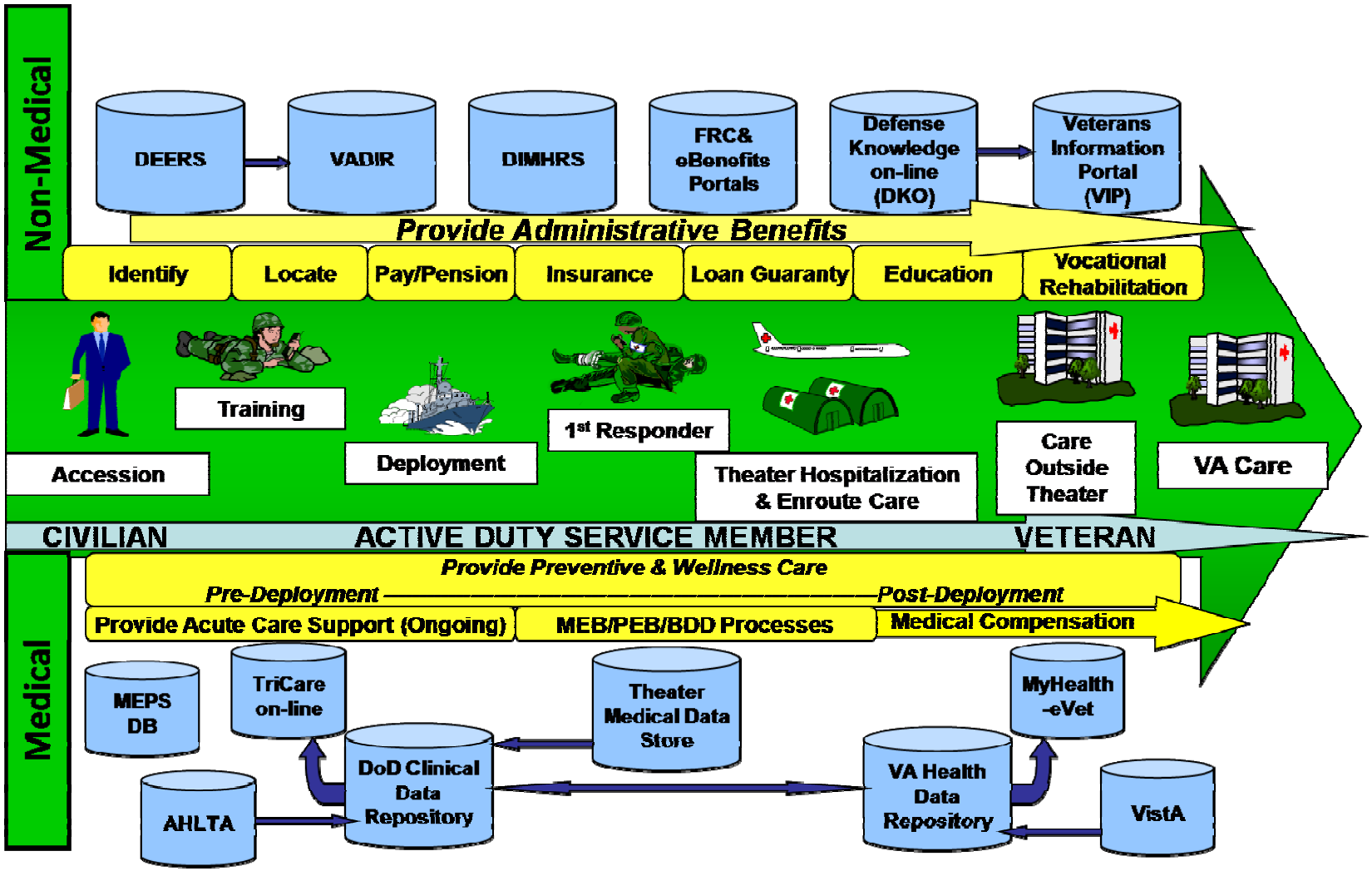


Milestones & Plans (Personnel / Administrative)

Several of the milestones below reflect the consolidation of separate, existing legacy feeds into a targeted single data feed for greater efficiency.



Appendix C: A view of **Systems' Interactions across Service Members' Lifecycle**



Appendix D: Initiative Descriptions and Timelines

Initiative – Image Sharing

Description

Image sharing will become a more robust, cross-enterprise approach that allows the image to remain in the originating system, but be viewable by the clinicians and specialists who need it, anytime and anywhere. DoD and VA want to provide healthcare providers with global awareness of the availability of medical and dental images, and provide efficient interagency access to those images. Shared images will be temporarily stored, but will not transfer from one agency to the other, facilitating real-time image awareness of and access to images at the point of care without negatively impacting on agency networks or storage capabilities. DoD and VA have recently demonstrated a potentially scalable working prototype for secure bidirectional image sharing. This working prototype capability is installed at William Beaumont Army Medical Center and the El Paso VA Health Care System. This initiative will facilitate real-time awareness of and access to essential images at the point of care including not only traditional radiological images (e.g., plain X-ray films, CT scans, MRI), but also photographic images (e.g.,, dermatology drawings, gastroenterology pictures) and scanned documents (e.g., clinical notes).

> **"Develop and implement near term, mid-term, and long term health IT solutions."**
> ***— Global War on Terror Heroes Report 2007***

Execution

- Develop a strategic plan to achieve enterprise-wide sharing of images.
- Determine VA/DoD Image Sharing Requirements.
- Push radiology images and scanned documents from DoD to VA.
- Leverage existing interoperability capabilities (BHIE) to exchange reports and images.
- Expand DoD and VA Image Sharing Prototype to additional sites.
- Store and transmit images obtained in deployed environment to DoD and VA as needed.
- Import Picture Archiving and Communication System (PACS) image and reconcile between DoD and VA.

Initiative	Timeline		
	Within 1 yr	**1-2 yrs**	**3-4 yrs**
Image Sharing	• Determine VA/DoD Image Sharing Requirements • Initiate interim solution for DoD-to-VA Radiology Data Push • Documents, Files, and Images Enabled AHLTA (DFIEA) Initial Capability (scanned documents)	• Expand Image Sharing pilot to additional sites • VA-wide Image Sharing for Clinicians and Specialists • DFIEA Enhancements (radiology images viewable in care centers at initial sites including dental images)	• VistA Imaging and DoD PACS image import reconciliation • Store and transmit images obtained from theater environment to DoD and VA as needed • VA/DoD Image and Document sharing • DoD-wide Image Sharing for Clinicians • DoD-wide Image Sharing for Specialists

Initiative –Inpatient Electronic Health Information

Description

> *"…single point of accountability for the Department of Defense and the Department of Veterans Affairs in the rapid development and implementation of electronic health record systems or capabilities that allow for full interoperability of personal health care information…accelerate the exchange of health care information…"*
>
> *—2008 National Defense Authorization Act (NDAA), Section 1635*

Inpatient Electronic Health Record (EHR) information includes the collection of patient-centric data which supports inpatient care including "same-day surgery" or "ambulatory surgery" processes and clinical status reporting within and across the DoD and VA. The interagency flow of information must fully support the continuity of care, the continuum of care, the concept of interoperability, and shareable data and processes. Effective inpatient data sharing standards may also facilitate secondary uses of data for internal (e.g., quality measurement) or external (e.g., public health reporting) purposes. At its core, the sharing of inpatient information must be patient-centric placing patients at the center of healthcare delivery process and focus information sharing on the integration of patient information from multiple providers and venues of care.

Execution

- Refine joint inpatient information requirements.
- Define intermediate sharing goals by note types available from legacy systems.
- Undertake clinical note classification system to ensure notes are recoverable by standardized nomenclatures.
- Update systems to exchange notes based upon standard note classification system.
- Integrate results of Joint Inpatient EHR project.

Initiative	Timeline		
	Within 1 yr	**1-2 yrs**	**3-4 yrs**
Inpatient Electronic Health Information	• Expand DoD's current Inpatient (Essentris) solution roll-out • Increase sharing of inpatient note types from existing (Clinical Information System, Bi-directional Health Information Exchange) • Finalize Joint Inpatient EHR acquisition/development plans • Undertake definition of clinical note classification system to ensure notes are recoverable by standardized nomenclatures	• Begin clinical notes exchanges based on standardized note nomenclature systems • Joint Inpatient EHR procurement (COTS product and/or contracting for development /integration services) • Begin development /integration of Joint Inpatient EHR solution.	• Exchange all notes based on standardized note nomenclature system • Implement Joint Inpatient EHR solutions at initial "alpha/beta" sites

Initiative – Reserve Component Access to Electronic Health Information

Description

> ***"Continue to support the maintenance and enhancement of existing VA and DoD data exchanges that support the one-way transmission of historical DoD data at the time of separation and bi-directional sharing of data for shared patients-addition data include theater data."***
>
> ***— Global War on Terror Heroes Report 2007***

Providing Reserve Component (RC) medical elements personnel access to electronic health information (through AHLTA, the military EHR) will improve unit readiness through improved access to individual medical readiness (IMR) information; enhance quality of care by allowing a more fully populated longitudinal record of care including periodic health assessments; increase efficiency of operations by reducing the need to navigate multiple IMR systems, and improve access to service-connected healthcare and benefits determination by ensuring the availability of a longitudinal record of care for transferring to the VA upon separation from active duty. Access to AHLTA will include access to VA clinical information data available through AHLTA. RC access to providing service-connected healthcare information can be shared with VA to improve potential future benefits determination as related to service condition.

Execution

- Provide access to RC units conducting Unit Training Assemblies at active component AHLTA sites (co-located Active Component (AC) and RC units).
- Develop lessons learned from initial co-located unit implementations.
- Define business policy and transformation requirements for RC roll-out of AHLTA access.
- Initiate pilot implementation programs for each Military Service.
- Provide read/write/print/scan capability to RC units.

Initiative	Timeline		
	Within 1 yr	**1-2 yrs**	**3-4 yrs**
Reserve Component access to electronic health information	• Determination of RC authorized user and roles-based access to AHLTA • Provide access to co-located units • Develop lessons learned • Define business transformation requirements • Initiate pilot programs for each Military Service	• Validate RC access requirements • Complete implementation of AHLTA access to RC units	

Initiative – Enhancements to Health Information Exchange between Clinical Information Systems

Description

> ***"DoD and VA should continue the work under way at present to create a fully interoperable information system that will meet the long-term administrative and clinical needs of all military personnel over time."***
>
> ***— Dole/Shalala Report July 2007***

Advanced clinical information systems have robust, clinical information exchange requirements that provide a source of data to produce wellness reminders, drug interaction alerts, and effective clinical decision support mechanisms. As the electronic health information systems of each department rely increasingly on these information exchanges, it is essential that continued modernization efforts and advancements in the standards-based exchange of health information are undertaken between these key clinical information systems. Greater resource sharing activities between the Departments as well as the shared medical management of an increasing number of patients including wounded warriors makes the importance of this initiative paramount in providing a robust, longitudinal record to support the continuity of care to our Service members and veterans.

Execution

- Expanding data feeds from the Federal Health Information Exchange (FHIE) program when new information types are made available for inter-departmental transfer.
- Implement near-term "viewable" information exchanges through the Bi-directional Health Information Exchange (BHIE) program, to include the exchange of inpatient documentation.
- Collaborate in the development of a standard, hierarchical naming convention for clinical notes with the Inpatient Electronic Health Information initiative.
- Complete implementation of demographics, pharmacy, and allergy domains of the Clinical Data Repository (CDR)/Health Data Repository (HDR) program (CHDR).
- Complete implementation of the laboratory domain of the CHDR program.
- Complete subsequent phases of the CHDR program.
- Develop classification system to standardized methods of recording and integrating implanted devices and objects into electronic health record systems (e.g., medical devices, embedded fragments, prostheses).

Initiative	Timeline		
	Within 1 yr	**1-2 yrs**	**3-4 yrs**
Enhancements to Health Information Exchange between Clinical Information Repositories	• Bidirectional transmission of viewable inpatient notes, vital signs family history, social history, questionnaires (BHIE Release 4) • Bidirectional transmission of computable outpatient medication, allergies, and adverse reaction alerts through CHDR • Continue to use of Active Dual Consumer (ADC) bidirectional transmission of demographic data	• Bidirectional transmission of computable laboratory (e.g., chemistry, hematology) data through CHDR • Begin clinical notes exchange based on standardized note nomenclature system	• Bi-directional transmission of data currently available as viewable, as prioritized by the DoD and VA Joint Clinical Information Board. This may include items such as Problem Lists, Clinical /Encounter Notes, Anatomic Pathology Results, Vital Signs, Family History /Health Factors, Radiology Reports (not including images), Immunizations through the appropriate program.

Initiative – Clinical Case Management

Description

Clinical Case Management (CCM) is defined as a collaborative process under the population health continuum which assesses, plans, implements, coordinates, monitors, and evaluates the options and services to meet an individual's healthcare needs through communication and available resources to promote quality, cost-effective outcomes. CCM pulls information form DoD's electronic health record (EHR) and other information systems to promote continuity of care within both inpatient and outpatient settings. CCM facilitates the uniform standardization for case management documentation and allow for seamless visibility of the Service members and veterans as they transition through multiple clinical settings, and through the process of evaluation and potential separation from active duty. We envision the CCM solution will be evolutionary and become a web based, globally accessed system that crosses both inpatient and outpatient case management documentation.

> ***"Implementation of case management will assure that the health care of active duty service members treated by both the DoD and VA is well-coordinated and that each service member has an identified "primary" Case Manager overseeing all care and services."***
>
> ***— Global War on Terror Heroes Report 2007***

Execution

- Analysis and design for a Web-based case management system.
- Implementation of standard, section 508 compliant, Web-based case management solution throughout DoD.
- Potential to share case management data between DoD and VA to include assistive technology and accommodations.

Initiative	Timeline		
	Within 1 yr	**1-2 yrs**	**3-4 yrs**
Clinical Case Management	• Define detailed requirements and design solution for Web-based clinical case management tool for DoD • Integrated with Non-Clinical Case Management solution.	• Pilot Web-based Clinical Case Management Tool in DoD	• Implement Web-based Clinical Case Management Tool • Establish clinical case management interfaces with DoD's electronic health record system

Initiative – Psychological Health Treatment and Care Records

Description

> "Develop a new method for evaluating how well PTSD patients are functioning."
>
> — Veterans Disability Benefits Commission / Institute of Medicine May 2007

Psychological Health (PH) Treatment and Care Record provides for the evaluating, documenting and treatment plan for patients with PH and, for some, associated Traumatic Brain Injury (TBI). Both DoD and VA's electronic health record (EHR) systems need enhancement to improve and support proper access to psychological health treatment records while appropriately protecting patient confidentiality. Additionally, this initiative supports improve detection and treatment of PH/TBI through use of cognitive assessment tools.

Execution

- Institute PH/TBI DoD Extender Coding and incorporate changes to ICD-9 code set to identify PH/TBI diagnoses.
- Determine requirements and business rules associated with behavioral health (BH) documentation and data sharing between agencies including confidential protections.
- Develop and implement a Cognitive Assessment Tool (CAT).
- Enhance DoD and VA EHR systems to provide behavioral health alerts and support improved treatment planning.

Initiative	Timeline		
	Within 1 yr	**1-2 yrs**	**3-4 yrs**
Psychological Health Treatment and Care Records	• Recommend PH/TBI codes to ICD-9 set • Institute extender codes to identify PH/TBI diagnoses • Add clinical diagnostic codes to DoD's EHR relevant to PH/TBI issues • Validate PH/TBI treatment and care records requirements	• Determine business rules for psychotherapy notes • Identify requirements for behavioral health and psychological assessment tools • Clinical enhancement to the DoD EHR system to accommodate behavioral documentation	• Migrate TBI historical extender codes to ICD-9 • Develop behavioral health alert flags and business rules • Deploy Automated Behavioral Health Clinic Tool • Implement Psychological Health capabilities • Integrate cognitive assessment tool • Update VA systems (Benefits and Healthcare) to view and obtain PH/TBI data

Initiative – Immunization Records and History

Description

> ***"DoD and VA should continue the work under way at present to create fully interoperable information systems that will meet the long-term administrative and clinical time."***
>
> ***— Dole/Shalala Report July 2007***

Ability for VA clinicians to enter immunization history into the DoD's authoritative immunization records to support operational readiness. Immunization history information must be entered in computable format in order to provide searchable support alerts and reminders for beneficiary care. Immunization history provides for the ability to report, track, and management administration of vaccines. This initiative is also associated with the need to support countermeasures and public health situations with prevention and treatment interventions to ensure adequate protection for Armed Forces.

Execution

- Identify common requirements, standards, and business rules for immunization reporting, tracking, and management.
- Obtain agreement on information standards and business rules for immunization records and reporting of adverse events across DoD and VA.
- Set immunization records policies and procedures.
- Pilot immunization record sharing across VA/DoD registries.
- Implement final solution for sharing immunization history and records.

Initiative	Timeline		
	Within 1 yr	**1-2 yrs)**	**3-4 yrs**
Immunizations Records and History	• Standardize immunization requirements and business rules • Validate immunizations standards • Draft immunization records policies and procedures	• Pilot immunizations information exchange between registries • Re-evaluate solution architecture and design • Finalize immunization records policy	• Implement final solution for sharing immunization history

Initiative – Integrated Personal Health Data with Patient Self-Assessment

Description

Improve quality through transition and coordination of care across the DoD, VA, and civilian network, including rapid and effective information sharing to support continuity of care and support.

A personal health record (PHR) is a repository of an individual's health and wellness information, a critical and multi-purpose tool to empower and encourage the participation of Service members, veterans, and eligible family members in activities contributing to health and well-being. The PHR will be an easy-to-use portable personalized and secure source of health information for DoD and VA beneficiaries.

While the small percentage of "Active Dual Consumers (ADCs)" (beneficiaries who are concurrently entitled to benefits both within the VA and DoD healthcare systems) does not suggest a requirement for a joint DoD and VA PHR, federal health information technology standards required for implementation within both Departments suggest some commonalities in design approach that will favor interoperability over time. The concept of "non-tethered" PHRs is gaining much support allowing a single PHR to "interoperate" with multiple electronic health records (EHR) systems. For consumers who seek healthcare from multiple healthcare systems (e.g., Medicare, employer-sponsored care), having a singular point of access to key health data and health data entry is important to the wellness of our beneficiary populations.

The PHR provides a framework for many functions capable of enhancing health and facilitating access to care in a manner that increases the efficiency of our nation's many healthcare systems. Access to health knowledge tools to provide beneficiaries information regarding disease and injury provides a comforting resource that is available 24 x 7. Additionally, the ability to book – and cancel – routine medical appointments online allows patients to choose times most convenient to them and has the additional positive effect of reducing clinic appointment "no-show" rates allowing our healthcare system to function more efficiently. The ability to import and record medications is key to enabling effective patient assessment and treatment planning during healthcare encounters away from one's routine provider of care. Evolving technologies supporting remote monitoring of medical conditions (e.g., blood glucose levels for diabetics, weight management for diabetics, and spirometry for severe asthmatics) can be leveraged to great effect through a patient's PHR. Secure messaging between patients and providers is also frequently associated with PHR platforms to reduce the need for visits to the doctor's office and automated wellness reminders sent from EHRs to PHRs can substantially increase the efficiency of personal health maintenance. The use of standard patient self-assessment tools, particularly for our wounded warriors, which can be augmented with

additional situation-specific questions (dynamic questionnaires), would provide an ability to more effectively transition care between the departments when required through medical disability separations or retirements. Such assessment tools would be helpful in planning care for service members' whose care is being transitioned to the VA based on separation (e.g., for disability) retirement with no particular health needs, or retirement with particular health needs. DoD and VA would move forward to identify and standardize questions as part of the joint collaboration.

Execution

- Develop a patient self-assessment team to identify Personal Health Data that has a need for integration between the two departments.
- Utilizing federal standards and industry standards, update departments' PHRs to include common registration and medication data that will allow receipt of clinical information from either department or from commercial healthcare providers who adopt these federal standards.
- Assess, on a case-by-case basis, when technologies employed by one department for use in their PHR solution might be leveraged by other department.

Initiative	Timeline		
	Within 1 yr	**1-2 yrs**	**3-4 yrs**
Integrated Personal Health Data with Patient Self-Assessment	• Establish joint core standards for questions, requirements, use cases, wireframes, and business rules for the capture and documentation • Work with usability groups and stakeholders on improving clinical adoption • Define PHR modernization strategy that includes federal standards • Continuously assess opportunities for use of common technologies to create federal efficiency	• Implement, capture, store, and view patient health assessment • Develop logic and algorithms to enhance PHR • Implement initial group of federal standards	• Continue integration of federal standards as the become available • Continue to work with Standards Development Organizations (SDOs) to support seamless exchange of electronic data between healthcare providers and beneficiaries where federal standards are not available

Initiative – Nationwide Health Information Network (NHIN)

Description

> ***"…Federal Agencies…shall utilize… health information technology systems and products that meet recognized interoperability standards."***
>
> ***— Executive Order 13410***

The Nationwide Health Information Network (NHIN) is an initiative sponsored by the Department of Health and Human Services (HHS) that leverages recognized interoperability standards in promoting health information exchanges among healthcare providers across the nation. A contract recently awarded by HHS funded 9 regional Health Information Exchanges (HIEs) to demonstrate health information exchange among geographically dispersed health networks. In addition to these 9 HIEs, NHIN-Consortium (NHIN-C) represents Federal agencies that will collaborate in becoming the 10th HIE to participate in the demonstration of standards-based health information exchange. Federal Healthcare systems are also integrating newly recognized information standards approved by the HHS Secretary into external health information transactions with private and partners outside their organizations. This initiative includes not only the engagement of the DoD and VA in the NHIN activities, but also the collaboration of the two Departments in national level dialogue on the identification of standards and interoperability specifications promoting HIEs at regional and national levels.

Execution

- Participate in the development a generic "gateway" that federal agencies will use to connect to other NHIN-connected HIEs.
- DoD & VA develop interfaces to the NHIN gateway.
- Develop IT support to populate from existing data sources for the exchange of a "continuum of care" documents.
- Test the ability to exchange continuum of care documentation with other federal agencies and external private healthcare organizations.
- Engage with other federal and private healthcare organizations in identifying future standards and implementation specification to integrate and exchange health information.
- Participate in pilot program to exchange health information with civilian network using specifications and tools developed from the NHIN.

Initiative	Timeline		
	Within 1 yr	**1-2 yrs**	**3-4 yrs**
Nationwide Health Information Network (NHIN)	• Participate in the development of generic "gateway" that each agency will use to connect to other HIEs • Develop interfaces to the gateway • Provide IT support to create Continuity of Care Documents based on HITSP specification using data elements from existing data sources • Demonstration of exchange of health information (de-identified or test data) among NHIN cooperative members, including Federal NHIN consortium • Demonstration of the exchange of health information with the NW Florida RHIO and NH Pensacola • Collaborate with Federal Health Architecture (FHA) and other federal agencies to develop use cases and requirements for NHIN	• Engage with other federal and private health partners in identifying future standards and implementation specifications for integration with HIEs • Expansion of exchange of information demonstrations, including support of Federal business cases, such as Wounded Warrior, Benefits and Eligibility and assistive technology	• Production deployment of NHIN "network of networks" with interoperability demonstrating computable and summary data exchange between Federal health providers and private sector • Continuous development of standards to support seamless exchange of electronic health data among health providers

Initiative – Personalized Healthcare

Description

> ***"The Departments should jointly develop metrics (with indicated accountability) that measure health care outcomes related to access, quality, and cost as well as progress toward objectives for collaboration, sharing and desired outcomes."***
>
> ***— PTF Recommendation 2.3***

Healthcare professionals have widely accepted the importance of family health history for assessing risk for a number of common diseases, including cancer, heart disease, and diabetes. As improvements in understanding of genetic/genomic occur, the importance of family health history as a predictive tool increases and enables healthcare to be increasingly patient-specific. Family health history data can assist in predicting disease risk early, enabling preemption of disease processes prior to full manifestations; analyzing effectiveness of different interventions in specific populations; and preventing the progression of disease and the related complications. The value of personalized healthcare information provides a mechanism to gain an understanding of the interplay between inherited and social factors that are relevant to the care of patients. The availability of genetic information; the ability to share family health history; and the ability to aggregate this data can greatly expand the capacity for personalized healthcare, providing more specific prevention, diagnosis, and treatments.

Execution

- Establish core standards, requirements, and business rules for the capture, documentation, and transfer of family health history between DoD and VA.
- Capture, store, and view family health history in both agencies' electronic health record and personal health record systems.
- Implement pilot to pull shared family health history data rather than duplicate entry and storage of data for shared patients.

Initiative	Timeline		
	Within 1 yr	**1-2 yrs**	**3-4 yrs**
Personalized Healthcare (Family History)	• Determine common standards, ethical requirements and business rules for family history • Study the need for genetic information with family history including the ethical implications of information sharing	• Implement a pilot to share family history information across DoD and VA	• Expand ability to share family history information across DoD and VA sites

Initiative – Interagency Program Office

Description

> ***"…single point of accountability for the Department of Defense and the Department of Veterans Affairs in the rapid development and implementation of electronic health record systems or capabilities that allow for full interoperability of personal health care information…accelerate the exchange of health care information….."***
>
> ***— 2008 National Defense Authorization Act (NDAA), Section 1635***

The Interagency Program Office will be the single point of accountability for cross-organizational coordination and collaboration to support health, personnel, and benefits data sharing. The Interagency Program Office will report on their plans and progress to the VA/DoD Joint Executive Council and incorporate key milestones into the VA/DoD Joint Strategic Plan. The Interagency Program Office will be responsible for management and oversight and not be the technical execution organization. It will help resolve any conflicts in the DoD and VA sharing requirements for health, personnel, and benefits functional communities. Additionally, it will ensure DoD and VA schedules are coordinated for technical execution of initiatives; coordinate funding considerations; and obtain input and concurrence of other DoD and VA stakeholders.

Execution

- Appoint interim Acting Director and Acting Deputy Director.
- Stand up IPO for operations.
- Provide interim detailed staff, temporary space and equipment.
- Appoint Permanent IPO Director and Deputy Director.
- Develop and gain approval on Interagency Agreement or charter.
- Define and receive approval on IPO organization structure and management plan (to include mission, functions, manpower, internal governance, accountability, authority, responsibility, and rules of engagement).
- Receive FY08 resourcing and establish budget line of authority.
- Finalize IPO resource management plan.
- Complete personnel position descriptions and rating schemes.
- Procure the resources for FY09 and FY10.
- Advertise and recruit government positions.

Initiative	Timeline		
	Within 1 yr	**1- 2 yrs**	**3-4 yrs**
Interagency Program Office	• Appointment Director and Deputy Director • Gain approval on Interagency Agreement or charter • Begin transition of oversight of HEC/BEC IM and IS/IT working groups to IPO • Realign LOA4 oversight to IPO • Stand up IPO organization with appropriate resources • Establish IPO Management Plan	• Conduct full range of monitoring, oversight, and reporting activities in support of stakeholders	• Continue monitoring, oversight, and reporting activities in support of stakeholders

Initiative – Interagency Data Sharing Integration into DoD and VA Architectures

Description

Improve quality through transition and coordination of care across the DoD, VA, and civilian network, including rapid and effective information sharing to support continuity of care and support.

The intent is not to create an isolated architecture for DoD and VA integration, but rather to ensure that the DoD and VA architectures accommodate the data sharing need. To increase the efficiency of operations while enhancing effectiveness of information flows, the departments will identify where their respective missions allow them to share common IT service architecture components or services. Working through Personnel and Readiness Information Management (P&R IM) to incorporate interagency data sharing requirements into the fully integrated DoD Human Resources Management Architecture, through the Health Architecture Interagency Group (HAIG) to focus on specific healthcare extensions of the MHS architecture and through VA forums for VA specific architecture, common service oriented architecture components should be identified, developed and leveraged where such solutions can effectively support the mission of both departments. A reduction in the number of "point-to-point" interfaces between systems will reduce maintenance costs, while increasing a focus on the quality of information provided through the evolving common services. Evolving national standards and services should be considered in the development of such common services and utilized where such standards do not conflict with the requirements of the departments.

Execution

- Adopt common reference models in use within DoD and VA.
- Incorporate common data sharing terminology into DoD and VA architecture as feasible.
- Adopt the highest privacy and security standards for protection of personnel information.
- Agree on a DoD / VA common reference information model.
- Determine requirements for a common reference terminology model.
- Identify and move towards common trust framework (privacy and security).
- Establish a common method for implementation of healthcare information exchange (format and protocol)
    - Identify opportunities for sharing common services
    - Develop plan for implementing inter-departmental common services framework through DoD and VA architectures

    - Define technical specification for common services
    - Develop common services
    - Pilot test common services.
- Implement Joint Common Service Framework.

Initiative	Timeline		
	Within 1 yr	**1-2 yrs**	**3-4 yrs**
Integration of Interagency Data Sharing into DoD and VA Architectures	• Reduction in the number of distinct data exchanges on personnel between VA and DoD • Development of joint common services framework concept of operations	• Assess and report to the HEC IM/IT WG components that will support a shared health architecture • Develop a Joint Common Services Framework	Implement phase I of Joint Common Services framework

Initiative – Trusted Partnership and Communication Infrastructure

Description

> ***"…expediting the flow of information and communication between military treatment facilities and the Department of Veterans Affairs…."***
>
> ***— 2008 National Defense Authorization Act,***

DoD and VA currently use a Virtual Private Network (VPN) between their networks to insure secure data transfer. DoD and VA have been working closely to move towards the establishment of a "trusted" relationship. VA/DoD will foster the development and implementation of a trusted network security and communications partnership in support of electronic health information sharing.

Execution

- Conduct a map and gap analysis of network security and communications policies which impact the secure transmission of health information between the Departments.
- Provide recommendations to DoD and VA governance that will influence or change network security and communications policies. 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 (HHS) for proposed incorporation of findings into Government-wide policy and implementation of policy.
- Draft a trusted network security and communications partnership implementation plan for consideration.
- Implement a secure gateway to support health data exchange and provide redundancy.

Initiative	Timeline		
	Within 1 yr	**1- 2 yrs**	**3-4 yrs**
Trusted Partnership and Communications Infrastructure	• DoD and VA initiated discussions to identify information assurance trusted partnership issues and develop strategies for resolution	• Identify Federal entity to perform FISMA certification and accreditation	• Implement multiple DoD and VA gateways • Include multiple access points through use of DMZ architecture • Adhere to mandatory information assurance security controls that meet both DoD and VA requirements

Initiative – Exposure History (Environmental and Occupational Hazards)

Description

The provision of a capability that integrates environmental and occupational health exposures into service members' health records is essential to providing continuity of care for exposure related injury and illness. Exposure history will be captured, stored, and analyzed to determine the environmental exposure history of military personnel. The exposure history should include both military assignment location and occupationally related exposures of the service members' routine work and workplace environment. This exposure-related information must be integrated with clinical records to ensure appropriate health service delivery at any time and at any location over the beneficiary's period of eligibility (Longitudinal Exposure Record). This exposure history and related treatment information will be shared electronically with VA to ensure continuity of care and adjudication of benefits.

> ***"Improve the data linkage between the electronic health record data systems used by DoD and VA—including capabilities for handling individual soldier exposure information that is included as part of the individual's health record. [IOM Rec. 16]"***
>
> ***— Veterans' Disability Benefits Commission Final Report – October 2007***

Execution

- Complete deployment of the Defense Occupational & Environmental Health Readiness System (DOEHRS) across the Military Health System to provide primary source data for occupational and environmental health-related exposures and treatment.
- Integrate DOEHRS information into the military electronic health record – AHLTA.
- Share exposure-related information between the DoD and VA.

Initiative	Timeline		
	Within 1 yr	**1-2 yrs**	**3-4 yrs**
Exposure History for Environmental and Occupational Hazards	• Validate exposure history sharing requirements between DoD and VA	• Complete DOEHRS deployment in Army and Navy • Design interfaces between DOEHRS and AHLTA • Provide interim data feeds from DOEHRS and DMDC to VA	• Complete DOEHRS deployment in Air Force • Integrate DOEHRS data into AHLTA • Pilot electronically share exposure history information between target systems

Initiative – Data Marts to support Clinical Research, Quality and Population Health Management

Description

> ***"The Departments should: (1) add an ex offico member from VA to the Armed Forces Epidemiological Board and to the DoD Safety and Occupational Health Committee; (2) implement a continuous health surveillance and research programs to identify the long-term health consequences of military service in high-risk occupations, settings, or events; and (3) jointly issue an annual report on Force Health Protection, and make it available to the public."***
>
> ***— PTF Recommendation 3.7***

Provide data marts and reporting tools that support clinical research, quality and population health. This initiative will leverage the vast clinical data repositories of the departments and, through secondary use of this data, support the many vital roles for enhancing the quality of clinical care, protecting the health of service members and veterans, and preparing for and responding to large man-made and natural disasters. Clinical research will leverage this capability to identify long term consequences of multiple drug use, occupational and environmental exposures and provide clinical findings to electronic health records solutions to integrate clinical knowledge into practice. Quality reporting capabilities will identify opportunities to improve care to our population overall, while population health surveillance will provide an early warning system not only for our service members and veterans but to our nation as a whole. Finally, reporting of system-wide clinical capabilities will provide a resource for response to and management of operations supporting national and man-made disasters.

Execution

- Leveraging existing data warehouses and data mart solutions between the two Departments.
- Define range of collaborative programs
    - Clinical Research and education support
    - Health surveillance and reporting
    - Quality reporting
    - Emergency response capabilities reporting.
- Design expanded capabilities of existing data warehousing and analysis solutions including use of common data standards for modeling/structure to ensure more effective integration.
- Run pilot demonstrations of the capabilities to develop lessons learned.
- Leverage lessons learned in final solutions designs.
- Develop, test, and implement solutions.

Initiative	Timeline		
	Within 1 yrs	**1-2 yrs**	**3-4 yrs**
Data Marts to support Clinical Research, Quality and Population Health Management	Design, develop, and implement limited scope, initial pilot	Complete multiple pilots and design, develop, and begin implementation of final solution from initial pilot	• Implement pilot to electronically support clinical research, quality and population health • Design, develop, and implement balance of pilot programs

Initiative – Knowledge Sharing for Psychological Health and Traumatic Brain Injuries (PH/TBI)

Description

"There is a lack of support to advance knowledge, enhance clinical management, and disseminate evidence-based treatment for TBI/PH."

Knowledge sharing for the Psychological Health (PH) and Traumatic Brain Injury (TBI) provides a virtual service, web-enabled portal that will serve as a comprehensive source of information and services targeting primarily DoD and VA PH/TBI healthcare providers, Wounded Warriors affected by PH/TBI, and their families and caregivers. It will facilitate an increased understanding and dissemination of knowledge on PH/TBI as well as improved PH/TBI care. Currently, PH/TBI services are disparate and varied. There is not a single, accessible location that could serve as guidepost to all available PH/TBI information. This initiative will:

- Assist in the development and promulgation of establishment of PH/TBI clearinghouse for the improvement of standard clinical practice guidelines;
- Foster full national expertise through collaboration with other organizations inside and external to DoD and VA;
- Implement current, evidence-based clinical assessment and recovery programs;
- Provide ongoing outreach;
- Provide global access through telehealth consultation.

Execution

- Establish telehealth tool to provide consultative services for remote communities.
- Serve as the web-based clearinghouse for PH/TBI research and evaluation of such research to include the use of assistive technology in the rehabilitation process.
- Coordination and outreach to academic centers, scholars, researchers, support groups and various other communities to confront the stigma associated with mental illness and provide forum for dialog.
- Establish web-based, interagency education and training for PH/TBI.
- Provide web-based tools to monitor PH/TBI data for surveillance.
- Develop web-enabled prevention and early intervention tools for PH/TBI.
- Create and maintain a registry of PH/TBI cases, identify and screen those who have left military without proper PH/TBI screening, and maintain a registry that identifies PH/TBI specialists.

Initiative	Timeline		
	Within 1 yr	**1-2 yrs**	**3-4 yrs**
Knowledge Sharing for Psychological Health and Traumatic Brain Injuries (PH/TBI)	• Identify functional requirements for PH/TBI clearinghouse portal and registry	• Provide web-based training for PH/TBI providers • Develop PH/TBI outreach discussion forums	• Provide web-enabled PH prevention tools • Develop PH/TBI web-based surveillance tools • Deploy Suicide Reporting Event Tool • Develop PH/TBI clinical data mart registry for research and evaluation • Develop and implement telehealth tools for healthcare providers for remote consultations • Implement PH/TBI web-based surveillance monitoring tools

Initiative – e-Benefits Portal

Description

> ***"DoD and VA should jointly develop an interactive 'My eBenefits' website that provides a single information source for service members."***
>
> ***Dole/Shalala Report, July 2007***

Today veterans have no single access source for information on benefits. The eBenefits portal will be a secure Service members/ Veteran-centric website portal – focused on the health, benefits, and support needs of the individual and their family members or other delegates. The eBenefits Portal will consist of both a public Website and a Secure Portal. The eBenefits portal will allow for personalization and customized access to content, services, and applications related to benefits. It will enable Servicemember/Veteran to find tailored benefit information and services in one place, rather than scattered across websites and access channels. The eBenefits portal offers enhanced services to veterans and military service members by improving online experience; it will encourage users to come back and use more online services, which will retain and expand the online user base. Most importantly, it will allow Wounded Warriors to find the information and services they need, when they need it.

Execution

- Create a plan to develop and deploy public and secure web VA/DoD "My eBenefits" portal in which Service members and veterans can securely enter personal information.
- Procure resources to design and develop secure, interactive web-based portal tailored to the needs of wounded warrior, identifying both VA/DoD benefits sources and services important for recovery.
- Develop integration strategy and security implementation requirements.
- Leverage existing VA/DoD websites already operational that provide needed information and services to create a "One-stop shop" for service members and veterans on health, benefits and supports needs.

Initiative	Timeline		
	Within 1 yr	**1- 2 yrs**	**3-4 yrs**
e-Benefits Portal	• New portal presence with links to existing major self service portals and pre-negotiated access for all service members and veterans. These portals will be Section 508 compliant to ensure accessibility to all.	• Migration from links and viewable information toward final VA/DoD eBenefits portal environment	• VA/DoD single sign-on capability and tailored benefits across both agencies based on individual profile solution

Initiative – Disability Evaluation System

Description

"Comprehensive IT support will be required to support the streamlined Disability Evaluation System."

Administrative and case management processes are neither timely, nor efficient, nor do they support the Service member and his/her family during periods of prolonged care and/or readjustment to active duty or civilian sector life. The Disability Evaluation System (DES) is the mechanism for implementing retirement or separation because of physical disability in accordance with Chapter 61 of 10 United States Code (U.S.C.). DES consists of four elements: medical evaluation; physical disability evaluation, to include appellate review; counseling and final disposition. This initiative focuses on providing information necessary to streamline business practices and automate the Medical Evaluation Board (MEB) and Physical Evaluation Board (PEB) processes. DES supports ready access to related medical diagnostic information leading to a potentially disqualifying diagnosis that a service member is medically unfit to perform their duties; a determination of retention decisions; and the Department of Veterans Affairs for evaluating and awarding compensation for Service-connected medical conditions. Automated support tools can improve management oversight and reduce the amount of time required for the disability evaluation system.

Execution

- Streamline through automation to support documentation and workflow track of MEB/PEB processing for a single medical examination and early involvement of the VA in a single disability rating by providing:
    - Process Automation Tool for Healthcare (PATH)
    - Repository and document management system
    - Tracking system with a dashboard to monitor status of the MEB/PEB process
    - AHLTA Enhancements
        - Automated Injury Cause Coding and Duty Restrictions Documentation in AHLTA
        - AHLTA Questionnaire Enhancements
        - Ability to incorporate baseline medical assessment information for personnel accessions from Military Entrance Processing Command (MEPCOM) units into AHLTA.

Initiative	Timeline		
	Within 1 yr	**1-2 yrs**	**Mid (3-4 yrs)**
Disability Evaluation System (DES)	• Expanded use of technology to monitor status and facilitate progress of MEB/PEB processing • A Section 508 compliant, web based application will provide current status and manage the workflow of pending cases	• Leverage on DES pilot identification of interfaces and modifications needed and capturing lessons learned	• Integrated VA/DoD separation processing to include transmission of a computable DD-214 and automated application for VA benefit claims upon separation • Develop, test and implement a VA/DoD Disability Evaluation System to include developing interfaces to other source systems such as health, financial, and case management systems

Initiative – Non-Clinical Case Management – Federal Recovery Coordinator's Tool

Description

> ***"DoD and VA should continue the work under way at present to create a fully interoperable information system that will meet the long-term administrative and clinical needs of all military personnel over time."***
>
> ***— Dole/Shalala Report July 2007***

The Non-Clinical Case Management (NCCM) - Federal Recovery Coordinator (FRC) tool provides personalized assistance for DoD and VA tracking and documentation care and benefits for Wounded, Ill, and Injured (WII) warriors. NCCM-FRC Tool will support both clinical and non-clinical services by integrating information regarding pay, housing, legal, charitable assistance, and other benefits decisions, as well as to help patients achieve efficient and effective transition from recovery to reintegration into military or civilian life. This integrated solution offers a better approach than the current fragmented processes for managing and assisting injured Service members and their families in navigating difficult and cumbersome systems of care and benefits. It provides patients with the right care and benefits at the right time in the right place by leveraging all resources appropriate to their individual needs. This integrated approach will build bridges across the full spectrum of services from healthcare to benefits provided by DoD and DVA.

Execution

- Create web-based Federal Individual Recovery Plans (FIRP) using interfaces with DoD and VA systems and manual data entry.
- Provide dashboard view of each FIRP to display data required for the FRC to offer oversight and problem resolution through recovery process and resource directory of services to include the use of assistive technology.
- Develop single, Federal NCCM-FRC tool to interface with FRC tool and integrated with Clinical Case Management solution.

Initiative	Timeline		
	Within 1 yr	**1-2 yrs**	**3-4 yrs**
Non-Clinical Case Management	• Prototype dashboard and leverage existing DoD and VA systems, tools and resources	• Automated pull of data where possible for initial resource directory • Provide single-sign on capability	• Refine prototype for integrated Non-clinical case management tool

Initiative –Pay Systems Information Enhancements

Description

> ***"From the time injured service members are evacuated from the battlefield to the time they go back to active duty or are discharged home to complete their education, go to work, and be active family and community members their needs and aspirations should inform the medical care and disability systems."***
>
> ***— Dole/Shalala Report July 2007***

Enhancements to DoD's Defense Finance and Accounting Service (DFAS) is an initiative to ensure that a Service member receives the appropriate pay and entitlements following wounds, illness, or injuries incurred while serving in a combat zone. DFAS must have access to type of injury, date of admission and discharge information types that is retrieved from healthcare to determine what types of pay will need to be discontinued or should be continued based on the wounded warrior's medical state. Having the ability to accurately track a wounded warrior throughout a variety of healthcare facilities to include DoD, VA, and private civilian sector hospitals in their treatment will enable DFAS to properly maintain the pay and entitlements of the wounded warrior. Each admission, discharge, or transfer of a patient must be properly documented and the data made available to DFAS. Currently there is no ability for DFAS to retrieve patient status information from VA or the private sector medical facilities.

Execution

- Improve the identification and tracking of Service members' hospitalization and treatment status
    - Provide electronically patient's admission, discharge, or transfer status to DFAS.
- Create a bidirectional sharing of pay, annuity, and disability payment information between DoD and VA financial systems.
- Streamline the pay management process and reconciliation activities.
- Utilize capabilities to be provided by Integrated Human Resource Sharing (IHRS).

Initiative	Timeline		
	Near (Within 1 yr)	**Near (Within 2 yrs)**	**Mid (3-4 yrs)**
Pay Systems Information Enhancements	• Establish standardized business rules and processes • Identify the information requirements needed by DoD's DFAS to ensure accurately and timely pay	• Develop electronic interfaces for existing health and personnel systems to provide DFAS with patient status and tracking information	• Standardize electronic interfaces to DFAS for health and personnel data sharing • IHRS may change short-term business processes already established

Initiative – Common Identity Management

Description

> ***"DoD and VA should continue the work under way at present to create a fully interoperable information system that will meet the long-term administrative and clinical needs of all military personnel over time."***
>
> ***— Dole/Shalala Report July 2007***

Identification is defined as a way of ensuring that the information managed during any interagency activity corresponds to the actual person, provider, or organization involved. This is an essential requirement for Electronic Health Records to have a common way to uniquely identify patients, providers, and care delivery organizations and help eliminate duplicated or incorrect patient records. DoDD 1000.25 specifically states that the Defense Manpower Data Center (DMDC), through the Defense Enrollment and Eligibility Reporting System (DEERS) is responsible for maintaining the DoD's centralized patient registry. DMDC tracks the identity of all persons receiving healthcare-related services. For every patient, DMDC will generate a single, unique, never reused system identifier, the DoD Electronic Data Interchange Person Identifier, or DOD EDIPNID. VA/DoD Identity Repository (VADIR) was initiated to assist in determining Veteran's benefits and consolidate data transfers of information concerning veteran's identity. VA and DoD will continue to work on a common identity management process using accepted standards such as EDIPN or the National Provider Identifiers (NPI). This initiative will also assist in the verification the identities of those seeking access to patient data between two Departments.

Execution

- Synchronous person identifiers between VA Master Patient Index and DEERS using VADIR.
- Validate the use of Centers for Medicare and Medicaid Services (CMS) NPI for identification of providers and care organizations among DoD, VA and private partners.
- Establish NPI-Integrated Product Team (NPI-IPT) to address related issues and questions towards the implementation of NPI.
- Continue to work on resolving any outstanding issues for full implementation of patient, provider, and care organization identity.
- Implement use of NPI for provider and organizational identities.

Initiative	Timeline		
	Within 1 yr	**1-2 yrs**	**3-4 yrs**
Identity Management	• Complete the synchronization between VA and DoD to uniquely identify a patient • Initiate NPI-IPT to validate and institute use of NPI	• Continue to resolve issue with the implementation of NPI within departments • Implement the use of NPI between two departments	• Continue to monitor the use and sharing of common identities • Report on cross-identity issue and problems to establish future resolutions

Initiative –Federal Health Center Information Technology Support

Description

> ***"DoD and VA should continue the work under way at present to create a fully interoperable information system that will meet the long-term administrative and clinical needs of all military personnel over time."***
>
> ***— Dole/Shalala Report July 2007***

The simultaneous, non-duplicative provisioning of accessible, high-quality healthcare is enabled by healthcare information sharing through secure and interoperable information systems, affording a seamless continuum of care. Collaboration in the provision of care facilitates an integrated coordination of benefits among service members, their families, clinical providers, case managers, and transition counselors.

Developing a Joint Federal Health Care Center (FHCC) between VA and DoD in North Chicago will serve as a model for IM/IT systems integration and interoperability. Serving a population of 67,000 beneficiaries to include active duty Military, 49,000 recruits and students, and 79,000 veterans have profound implications and impact on continuity of care, healthcare outcomes, patient safety, operational readiness, and requires a fully functioning electronic health record and ancillary business system.

Execution

- Establish Project Management Team for comprehensive assessment and review of clinical processes, business processes, informational and operational readiness requirements, functional scenarios, and use cases relevant to the implementation and activation of a FHCC.
- Complete the development and analysis of all options and provide recommendations on the optimal approach for selection, acquisition, and/or development of VA/DoD information systems to ensure successful clinical and business data sharing by June 2010.
- Ensure that existing Enterprise level work group efforts (e.g., BHIE and CHDR) are integrated in developing IM/IT solutions that address specific needs of the FHCC.
- Ensure that recommended solutions are completed in a timely manner to allow for the procurement and installation of software and hardware that will allow for real-time exchange of information between VA and DoD information systems.

Initiative	Timeline		
	Within 1 yr	**1-2 yrs**	**3-4 yrs**
Federal Health Center Information Technology Support	• Establish Project Management Office • Develop business rules and functional requirements • Complete gap analysis between current systems and requirements • Develop system software/hardware requirements • Develop system architecture and infrastructure requirements • Complete network design	• Continue system development • Continue system architecture design • Establish network infrastructure • Certify and Accredit full network • Execute system migration plan • Install network equipment and system hardware • Complete FHCC Business Plan • Complete FHCC Implementation Plan • FHCC opens	• Continuous development of standards to support seamless exchange of electronic information

APPENDIX E:
Department of Defense (DoD)/Department of Veterans Affairs (VA) Electronic Health Records Interoperability

Introduction

This plan addresses those areas stipulated in the National Defense Authorization Act for Fiscal Year 2008, Section 1635, (e), and includes the provision of:

1. A schedule for the establishment of the Interagency Program Office (IPO);

2. A schedule and deadline for the establishment of the requirements for electronic health records (EHR) systems or capabilities…including coordination with the Office of the National Coordinator for Health Information Technology;

3. A schedule and associated deadlines for any acquisition and testing required in the implementation of electronic health record systems or capabilities that allow for full interoperability;

4. A schedule and associated deadlines and requirements for the implementation of electronic health record systems or capabilities.

The plan is presented in two sections, and will be incorporated as an Appendix in the DoD and VA Information Interoperability Plan (IIP). Section one focuses on the establishment of the IPO; section two on interoperability of electronic health record systems or capabilities.

It is intended that this plan serve as a "living document." The plan will be updated and refined as greater granularity of information becomes known on planned fiscal year 2008 and 2009 initiatives, and as healthcare information needs change, as identified by the clinical community. The plan builds upon the requirement to provide essential health data to healthcare providers and other authorized users who need it by September 2008 as defined by the Dole/Shalala President's Commission on Care for America's Returning Wounded Warriors Report. Additionally, the plan identifies projected EHR interoperability improvements beyond September 2009.

As the plan evolves it will be shared with the Office of the National Coordinator for Health Information Technology.

DoD and VA leadership look forward to continued progress and are committed to working together to achieve interoperability of our electronic health records systems and capabilities for the enhanced continuity of care of shared patients and our wounded, ill, or injured Service members and veterans.

Purpose

The purpose of this document is to define Fiscal Year 2008 and 2009 schedules and milestones for standing up an IPO, and requirements validation, acquisition and testing, and implementation of EHRs systems or capabilities that allow for full interoperability of personal healthcare information between DoD and VA.

Background

- Today, most information that is captured electronically by DoD and VA and necessary for continuity of care and benefits administration is being shared. Both Departments have electronic health records and have used computer systems to automate administrative and healthcare functions for many years; however, there is not widespread adoption of electronic health records in the private sector among the many network providers who deliver care to many of the beneficiaries of the DoD and VA.

- The initiatives' milestones and schedules were determined by assessing their importance to the clinical communities, that is, the importance of the information to clinical treatment, as well as their feasibility of implementation.

- The Center for Information Technology Leadership (CITL) Levels of Standardization was used in determining the appropriate interoperability levels for the sharing of information; standards which have been accepted for use by the Office of the National Coordinator for Health Information Technology.

- Clinicians on the DoD and VA Joint Clinical Information Board (JCIB) apply the CITL standards to determine what information needs to be viewable versus computable. Most of the near real-time information sharing between the DoD and VA is at CITL Level 3 – the electronic transmission of structured messages that contain viewable, but non-standardized information. As an example, most clinical notes can be transmitted at Level 3 with no loss of clinical utility and, therefore, a higher level of interoperability is not required.

- As stakeholders' needs, technology, business practices, and data standards evolve, the EHR interoperability initiatives will be updated to incorporate changes in strategy, yet holding true to the Information Interoperability planning framework and information management best practices.

- Success will be measured in incremental improvements in EHR information interoperability rather than in one major implementation of an IT product.

Governance Structure

- The two Departments have a formal governance council structure to oversee development of policy and support DoD and VA joint initiatives and resource sharing, including information sharing. The JEC is co-chaired by the Deputy Secretary of VA, and the DoD Under Secretary for Personnel and Readiness. The JEC is the overarching council, and links the two supporting councils: the HEC and the BEC.
- The schedules and milestones for capabilities or initiatives stated in this plan will be incorporated into the DoD and VA Joint Strategic Plan and governed by the JEC and HEC. It is anticipated that future versions of this plan will incorporate schedules and milestones for initiatives and capabilities associated with benefits.

Interoperability Defined

DoD and VA have agreed to use the following definition of interoperability which focuses on the desired outcome of information interoperability, that is, a mutual understanding of shared information.

The ability of users to equally interpret (understand) unstructured or structured information which is shared (exchanged) between them in electronic form.

EHR Interoperability Goal

To achieve a single logical (not physical) electronic health record view across the full service member and veteran life-cycle.

Key Planning Assumptions

- Required Levels of EHR interoperability will be determined by the clinical communities;
- Different clinical situations drive the need for different information sharing solutions (e.g., seriously injured inpatient transferring from DoD to a VA facility vice ambulatory patients seen by both DoD and VA);
- Capabilities enhancements to EHR interoperability will build on the provision of essential health data by September 2008;
- Implementation of EHR interoperability is constrained by funding;
- Investment Portfolios will provide transparency into EHR interoperability initiatives;
- Governing bodies will incorporate strategic guidance on EHR interoperability into the VA/DoD Joint Strategic Plan;
- Policies will precede the fielding of information technology solutions;
- Process reengineering will precede the fielding of information technology solutions;
- Workforce training on information management practices is required;

- Workforce communications on information availability is required;
- Capability enhancements to EHR interoperability will be made beyond September 2009;
- DoD and VA architectures will accommodate the data sharing need, but not to create an isolated architecture for DoD and VA integration
- Implementation of initiatives will be benchmarked against the Project Management Institute Project Management Body of Knowledge (PMBOK) methods and tools.

Strategies for Meeting EHR Interoperability

- Utilize an incremental strategy;
- Achieve initially a "viewable" interoperability capability and transitioning to "computable" capability when required;
- Address needs for high priority locations (e.g., polytrauma centers, DoD and VA facilities with significant amounts of shared patients) following with enterprise wide deployment; and
- Validate against the findings of the DoD and VA Joint Clinical Information Board.

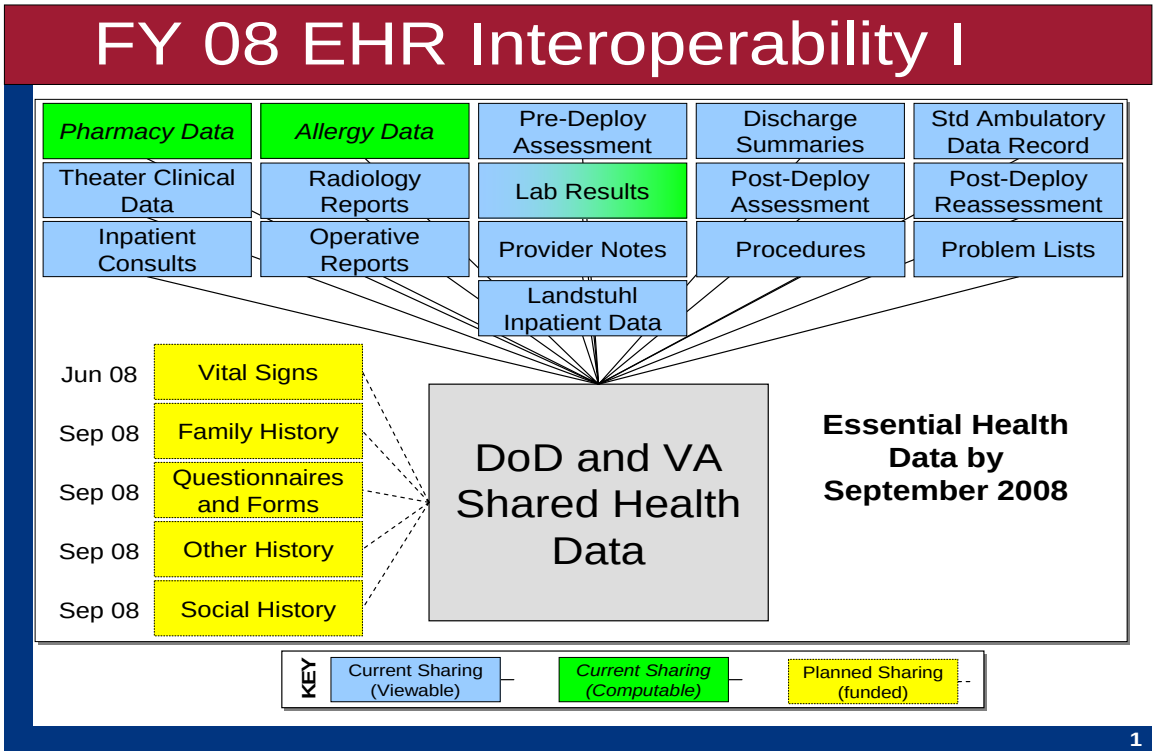
Achieving EHR Interoperability I and II

- To support EHR interoperability, several key enablers are required. These include:
    - Interagency data sharing integration into DoD and VA architectures
    - Agreement on communication network trusted partnership infrastructure and applicable policies and standard changes, if required
    - Development of a Joint Identity Management solution

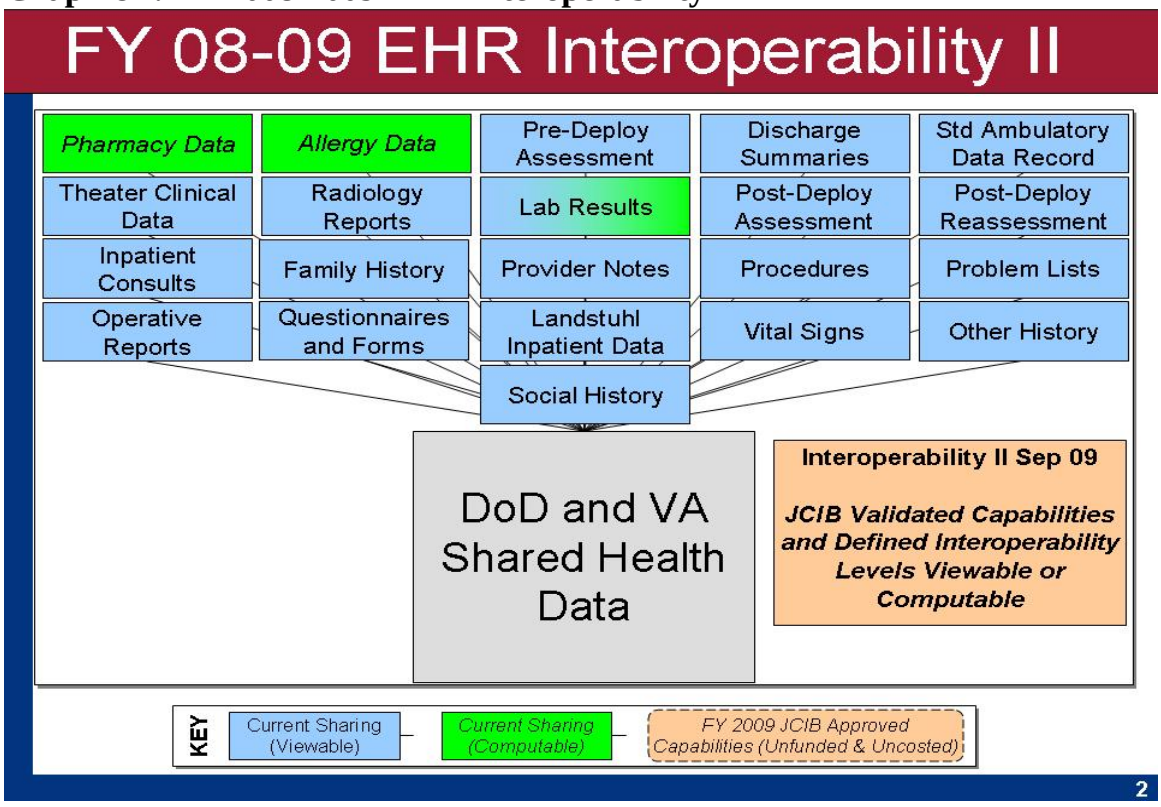
- In FY 2008, essential health data will be made available to DoD and VA providers, as called for in the President's Commission on Care for America's Returning Wounded Warriors. Graphic 1, FY 08 EHR Interoperability I, highlights those health data most commonly required by healthcare providers, as validated by the JCIB.

- Additional health information enhancements, as proposed or validated by the JCIB, and approved by the Health Executive Council, will be provided by September 2009, as reflected in Graphic 2.

Graphic 1. FY 2008 EHR Interoperability I



Graphic 2. FY 2008-2009 EHR Interoperability II



Capability Descriptions and Schedules for Standing-Up the Interagency Program Office

- Table 3 provides a list of key activities and milestones required to establish the IPO. Activities will be executed as expeditiously as possible working within Departmental regulations and guidelines.

Table 3. Activities and Schedules for Standing Up the Interagency Program Office

IPO Activities	Due Date
Appointment Interim Acting Director and Acting Deputy Director	April 17, 2008
Stand up IPO for operations	April 17, 2008
Provide interim detailed staff, temporary space and equipment	May 15, 2008
Develop Charter or Interagency Agreement	June 15, 2008
Define and receive approval of the IPO Organization Structure Document to include mission, function, manpower, internal governance, accountability, authority, responsibility and rules of engagement	June 15, 2008
Receive initial FY 2008 dollars to stand up office and budget line of authority	June 30, 2008
Approve Charter or Interagency Agreement	July 30, 2008
Complete Resource Management Plan to include budget, space, equipment, and human resources	July 30, 2008
Complete personnel position descriptions and rating schemes	August 31, 2008
Procure the resources including receive budget line of authority for FY 2009 and 2010	October 1, 2008
Appoint Permanent Director/Deputy	October 1, 2008
Advertise and recruit government positions	October 5, 2008

IPO Assumptions

- IPO Personnel performance ratings, other than for the Director and Deputy Director, will be performed by the IPO management structure.

- IPO Director will have the flexibility to adopt the "best of breed" practices from DoD and VA to enable the most efficient organization processes. For example, the Director will have the ability to use the VA communications and marketing processes, use DoD small purchase credit card authorities, or make other such decisions to encourage efficiency in carrying out the mission of the office. Decisions on identified

key practice areas will be made within the first 90 days and defined in the organization structure document. Changes may be incorporated as needs are identified or the Director and Deputy Director determine processes are not resulting in the desired outcomes.

- IPO will have one budget line of authority and will enter into agreements with other entities for basic operating services, such as information technology support.
- Costs for infrastructure support (e.g., lease, equipment, furniture, network, phones) will be paid for by DoD.
- Government personnel salaries will be paid by the organization from which they have been detailed or are hiring the individual.

Capability Descriptions and Schedules in Support of EHR Interoperability II

- The acquisition model below, see Table 4, was utilized as a framework for developing schedules and milestones for achieving fully interoperable electronic health record systems and capabilities by September 2009. Requirements must be prioritized by the DoD and VA Joint Clinical Information Board by August 30, 2008 to allow sufficient time to acquire/build, test and be implementation ready, by September 30, 2009.

Table 4. Acquisition Model for Achieving Interoperability II

- Table 5 provides capabilities and milestones for supporting electronic health record systems and capabilities interoperability by September 2009. As additional information becomes available, the table will be updated.

Table 5. Interoperability II Capabilities and Milestones

Scanned Documents in DoD EHR (DFIEA Initial Capability)	June 30, 2008	August 30, 2008	September 15, 2008	September 30, 2008
Radiology Images Viewable in Care Centers at initial sites (DFIEA Enhancements)	June 30, 2008	August 30, 2009	September 15, 2009	September 30, 2009

Vital Signs (BHIE Release 3)	Complete	Complete	June 15, 2008	June 30, 2008
Family History, Social History, and Questionnaires (BHIE Release 4)	Complete	August 30, 2008	September 15, 2008	September 30, 2008
Essentris Roll-out (Interim in-patient solution)	Complete	Complete	Complete	TBD
Image Sharing (NDAA El Paso Pilot Expansion to additional sites)	Complete	Complete	Complete	September 30, 2009
Additional Image Sharing (JCIB Validated)	June 30, 2008	June 15, 2009	September 15, 2009	September 30, 2009
JCIB Confirmed Capability Needs	Requirements Validation	Acquisition	Test	Implement
Expansion of Essentris implementation in DoD	Complete	Complete	NA	Deployment Schedule for FY 2009 due Oct 31, 2008
Demonstration of initial Trusted Partnership Gateways (Secure Network to Support Health Data Exchange)	Complete	Complete	Complete	Migration to (2) new gateways beginning in Sept 2008
Social History - refine	TBD	TBD	TBD	September 2009
Document Scanning (Initial Capability)	TBD	TBD	TBD	September 2009
Expansion of Questionnaires/Self-Assessment Tools	Oct 31, 2008	TBD	TBD	September 2009
Separation Physical Exams (data)	October 31, 2008	TBD	TBD	September 2009

- The initiatives' milestones and schedules were determined by assessing their importance to the DoD and VA Joint Clinical Information Board (clinical community), that is, the importance of the information to clinical treatment, as well as their feasibility of implementation. As required by the NDAA language and to provide DoD and VA leadership a mechanism for oversight and management, milestones for requirements validation, acquisition and testing, and implementation are shown. Implementation represents completion of testing and acceptance by DoD and VA at the operational test sites. The Interagency Program Office will work with the Services and appropriate VA offices to ensure implementation in a timely manner to the individual military treatment facilities and VA facilities.

APPENDIX F:

Contributors

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APPENDIX G

Glossary of Terms

- Administrative – The act or process of administering, especially the management of financial pay, personnel benefits (e.g., loans, insurance), and human resources (e.g., training)

- AHLTA – DoD's global electronic healthcare record that provides authorized healthcare providers access to data about beneficiaries' conditions, prescriptions, diagnostic tests and additional information essential to providing quality care

- Barriers –factors that hinder efforts to improve the information interoperability between DoD and VA

- Beneficiary – individual eligible to receive medical care provided by military medical facilities, TRICARE network, or VA medical centers to include Active Duty personnel, Active Duty dependents, military retirees and their dependents, and survivors of deceased Service members

- Bidirectional Health Information Exchange – enables real-time sharing of unstructured (text) health information between DoD and VA for shared patients
- Chapter 30 – active duty education assistance program under Title 38, USC for Montgomery GI Bill

- Chapter 31 – vocational rehabilitation and employment program from Title 38, USC

- Chapter 35 – survivors' and dependents' education assistance program under Title 38, USC

- Chapter 36 – administration of education benefits in Title 38, USC

- Chapter 1606 – Montgomery GI Bill for selected reserves in Title 10, USC

- Chapter 1607 – reserve educational assistance program (REAP) under Title 10, USC

- Clinical Data Repository – a component within AHLTA that centrally stores patient healthcare history for all beneficiaries treated in military treatment facilities

- Clinical Data Repository/Health Data Repository – joint initiative between DoD and VA to transfer structured, computable data and to establish interoperability between DoD's Clinical Data Repository and VA's Health Data Repository

- Composite Health Care System – DoD's automation system that supports medical treatment facility operations such as clinic appointments, pharmacy inpatient medication processing and outpatient prescriptions, laboratory procedures, radiology procedures. It is a component of AHLTA, the DoD's Electronic Health Record system.

- Computable – data format that a computer application can act on for example, to provide alerts to clinicians of drug allergies; system exchange of information using the same formats and vocabularies

- DD-214 – report of separation; certificate of release or discharge from active duty

- DD-2795 – Pre-deployment Health assessment form

- DD-2796 – Post-deployment Health assessment form

- DD-2900 – Post-deployment Health Reassessment form

- Defense Enrollment Eligibility Reporting System (DEERS) – serves as a central DoD repository of personnel and medical data. The DEERS Person Data Repository (PDR) contains one database record for each Uniformed Service member (Active Duty, retired or a member of a Reserve Component), US-sponsored foreign military, DoD Uniformed Services civilians, other personnel as directed by the DoD (including the patient population serviced through the Military Health System), and their eligible family members

- End-state – the set of required conditions that defines achievement of the VA and DoD's targeted objectives

- Federal Health Information Exchange – enables the transfer of health information from DoD to VA for separated service members

- Joint – for this information interoperability plan, an interagency collaborative effort between the DoD and VA

- Individual Medical Readiness – means to assess an individual Service member's readiness level against established metrics to determine medical deployability in support of contingency operations

- Information Infrastructure Management –involves the management and stewardship of a type of information by the federal government and/or the creation of physical communication infrastructures on behalf of the public in order to facilitate communication. It encompasses policies and procedural considerations as well as hardware, software, and networks

- Information interoperability – is the ability of users to equally interpret (understand) unstructured or structured information which is shared (exchanged) between them in electronic form

- Laboratory Data Sharing Initiative – joint DoD and VA initiative to facilitate the sharing of lab order entry and results to include commercial reference laboratory results

- Metadata – data that describes other data. The term may refer to detailed compilations such as data dictionaries and repositories that provide a substantial amount of information about each data element. It may also refer to any descriptive item about data, such as a title field in a media file, a field of key words in a written article or the content in a meta tag in an HTML page

- Military Health System – organizational structure designed by the United States Armed Forces to coordinate the provision of medical care for its beneficiaries

- Military Treatment Facility – a military hospital or clinic on or near a military base

- My Health***e***Vet – Web-based product providing veterans with information and tools to improve their health

- Post-Traumatic Stress Disorder – an anxiety disorder that can occur following the experience or witnessing of traumatic events. A traumatic event is a life-threatening event such as military combat, natural disasters, terrorist incidents, serious accidents or sexual assaults in adult or childhood

- Reserve Component – Army National Guard, Army Reserve, Naval Reserve, Marine Corps Reserve, Air National Guard, Air Force Reserve, Coast Guard Reserve, and Reserve Corps of the United States Public Health Service

- Section 508 – Section 508 of the Rehabilitation Act requires that Federal agencies ensure the electronic and information technology that is developed, procured, maintained, or used by an agency is accessible for people with disabilities – both employees and members of the public. Section 508 ensures that people with disabilities who encounter barriers when using electronic and information

technology are provided with access to eliminate these barriers. Examples of barriers include computer hardware which is incompatible with assistive technology; training materials which are inaccessible to blind and/or deaf people; or voicemail systems which are inoperable by people who are deaf.

- Service member – a person appointed, enlisted or inducted into a branch of the Uniformed Services including Reserve Components (includes National Guard), cadets, or midshipmen of the Military Service Academies

- Shared beneficiaries – An individual who is receiving care from both DoD and VA. Care delivery by both Departments may be based on the individual being dual-eligible or under a local sharing agreement between specific DoD and VA sites

- Structured Information – information is that divided up for analysis, and the part and relationships have been identified so that a computer can process in useful ways. Here data, characteristics, key figures, assignments and other attributes are presented in table or diagram form. The use of trees, grids, and other graphics is also usual. These structures enable diverse analyses. Structured information allows for searching, sorting, filtering, highlighting, and exceptions can be used as desired on individual attributes

- Traumatic Brain Injury – a blow or jolt to the head or a penetrating head injury. The injury may be caused by falls, motor vehicle accidents, assaults and/or other incidents. Blast and concussive events are a leading cause of TBI for active duty military personnel involved in war zones

- TRICARE Management Activity – formally established as a DoD field activity of the Undersecretary of Defense for Personnel and Readiness to manage the TRICARE healthcare program for active duty members and their families and others entitled to DoD medical care

- Unstructured Information – is usually free-text, body of texts, pictures, films that stored in different ways and created individually and manually rather than automatically. Search of unstructured information is using an index

- VA/DoD Identity Repository (VADIR) – support a One VA/DoD data-sharing initiative in order to consolidate data transfers between the DoD and VA to assist in determining Veteran benefits

- VA/DoD Sharing – A program established by Public Law 97-174 “Veterans Administration and Department of Defense Health Resources Sharing and

Emergency Operations Act," May 4, 1982, to ensure maximum use of DoD and VA facilities and services within the same geographic area

- Veteran – A person who served on active duty in the Armed Forces and was discharged or released there from under conditions other than dishonorable

- Veterans Affairs (VA) Beneficiary – A person who is entitled to certain medical care in a VA hospital, or who may be provided healthcare in a Military Treatment Facility at the expense of Veterans Affairs

- Viewable – information that is capable of being viewed but cannot be electronically manipulated; data is transmitted in non-standardized format (e.g., scanned document, PDF files)

- VistA – VA imaging system that makes complete multimedia patient record available to clinicians and patients

APPENDIX H

List of Acronyms

AC	Active Component
ADCs	Active Dual Consumers
ADT	Admission/Disposition and Transfer
AHIC	American Health Information Community
AKO	Army Knowledge Online
ANAM	Automated Neuropsychological Assessment Metric
ASD(HA)	Assistant Secretary of Defense Health Affairs
BEC	Benefits Executive Council
BHIE	Bidirectional Health Information Exchange
CAT	Cognitive Assessment Tool
CCHIT	Certification Commission for Healthcare Information Technology
CCM	Clinical Case Management
CDC	Centers for Disease Control
CDM	Clinical Data Mart
CDO	Care Delivery Organization
CDR	Clinical Data Repository
CHDR	Clinical Data Repository / Health Data Repository
CHCS	Composite Health Care System
CHI	Consolidated Healthcare Informatics
CIS	Clinical Information System
CITL	Center for Information Technology Leadership
CMS	Centers for Medicare and Medicaid Services
COE	Center of Excellence
CONUS	Continental United States
COTS	Commercial-off-the-shelf software
CPG	Clinical Practice Guidelines
CPRS	Centralized Patient Record System
CPSC	Clinical Proponency Steering Committee
CT	Computed Tomography
DD	Department of Defense Forms
DEERS	Defense Enrollment and Eligibility Reporting System
DES	Disability Evaluation System
DFAS	Defense Finance and Accounting Services
DFIEA	Documents, Files, and Images Enabled AHLTA
DHP	Defense Health Program
DKO	Defense Knowledge Online
DMDC	Defense Data Manpower Center
DMZ	Demilitarized Zone
DoD	Department of Defense
DOEHRS	Defense Occupational and Environmental Health Readiness System
EHR	Electronic Health Record
EHR-S	Electronic Health Records System
EDIPNID	Electronic Data Interchange Person Identifier

FHA	Federal Health Architecture
FHCC	Federal Health Care Center
FHIE	Federal Health Information Exchange
FIRP	Federal Individual Recovery Plan
FISMA	Federal Information Security Management Act of 2002
FRC	Federal Recovery Coordinator
FY	Fiscal Year
GAO	Government Accountability Office
GWOT	Global War on Terror
HAIG	Health Architecture Interagency Group
HDR	Health Data Repository
HEC	Health Executive Council
HHS	Department of Health and Human Services
HIE	Health Information Exchanges
HIMSS	Healthcare Information and Management Systems Society
HIPAA	Health Information Portability and Accountability Act
HITSP	Healthcare Information Technology Standards Panel
HL7	Health Level Seven
ICD-9	International Classification of Disease Version 9
IHRS	Integrated Human Resource Sharing
IIP	Information Interoperability Plan
IMR	Individual Medical Readiness
IOM	Institute of Medicine
IPO	Interagency Program Office
IPT	Integrated Product Team
IRG	Independent Review Group
ISDS	Images and Scanned Documents Sharing
IT	Information Technology
JEC	Joint Executive Council
JEHRI	Joint Electronic Health Records Interoperability
JIF	Joint Incentive Fund
JPTA	Joint Patient Tracking Application
JSP	Joint Strategic Plan
LOA	Lines of Action
LDSI	Laboratory Data Sharing Initiative
MEB	Medical Evaluation Board
MEPCOM	Military Entrance Processing Command
MGIB	Montgomery GI Bill
MHS	Military Health System
MRI	Magnetic Resonance Imaging
MTF	Military Treatment Facility
NCCM-FRC	Non-Clinical Case Management – Federal Recovery Coordinator
NDAA	National Defense Authorization Act
NIST	National Institute of Standards and Technology
NHIN	Nationwide Health Information Network
NPI	National Provider Identifiers
OCONUS	Outside Continental United States

OEH	Occupational and Environmental Health surveillance
OIPT	Overarching Integrated Product Team
OMB	Office of Management and Budget
ONC	Office of the National Coordinator for Health Information Technology
OSD	Office of the Secretary of Defense
PACS	Picture Archiving and Communication Systems
PATH	Process Automation Tool for Healthcare
PB	President's Budget
PDHA	Post-Deployment Health Assessment
PDHRA	Post-Deployment Health Reassessment Program
PEB	Physical Evaluation Board
PH	Psychological Health
PHI	Protected Health Information
PHR	Personal Health Record
PTSD	Post Traumatic Stress Disorder
RC	Reserve Component
SECDEF	Secretary of Defense
SDO	Standards Development Organizations
SF	Standard Forms
SI	Seriously ill
SOA	Service Oriented Architecture
SOC	Senior Oversight Committee
TBI	Traumatic Brain Injuries
TMA	TRICARE Management Activity
TMIP-J	Theater Medical Information Program – Joint
TRAC2ES	TRANSCOM Regulating and Command & Control Evacuation System
TRANSCOM	Transportation Command
USD(P&R)	Under Secretary of Defense for Personnel and Readiness
VA	Department of Veterans' Affairs
VADIR	VA/DoD Identity Repository
VAMC	VA Medical Center
VBA	Veteran's Benefits Administration
VHA	Veterans Health Administration
VISN	Veterans Integrated Service Network
VistA	Veteran's Health Information Systems and Technology Architecture
VPN	Virtual Private Network
VSI	Very Seriously Ill
VTA	Veteran's Tracking Application
WII	Wounded, ill, and injured

APPENDIX I

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