Current and Future State of Health Informatics for Veterans Health Administration

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MARCH 4, 2013

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Conflict of Interest Disclosure

Theresa Cullen, MD, MS

Has no real or apparent conflicts of interest to report.
Learning Objectives

• **Learning Objective 1:**
  – Outline the role of health informatics within the Department of Veterans Affairs (VA), Veterans Health Administration (VHA)

• **Learning Objective 2:**
  – Summarize the activities of the health informatics portfolio that support the evolution of the Electronic Health Record (EHR)

• **Learning Objective 3:**
  – Describe the state of VA’s EHR today and plans for the future
Health Informatics (HI)
Mission and Vision

• **Mission Statement** - Drive standards and science-based information technology resources, systems, and solutions for the benefit of Veterans health, their families, and those who care for them.

• **Vision Statement** - Veteran-centric ecosystem for health transformed by access to information and knowledge.
HI Goal

The Right Information to the Right Person at the Right Time

– Ongoing Veterans Health Information Systems and Technology Architecture (VistA) / Computerized Patient Record System (CPRS) challenges
– Workforce development and support
– Integrated portfolio of clinical information systems
Where We Are

Adoption Curve

Emerging Health Technologies

Time

VistA/CPRS

hi2/ iEHR

Acronyms:
CPRS - Computerized Patient Record System
hi2 – Health Informatics Initiative
iEHR – integrated Electronic Health Record
VistA - Veterans Health Information Systems and Technology Architecture
Applied Informatics Services (AIS)

FUNCTIONS

• Provide leadership in the implementation and management of clinical information systems that improve the delivery of health care to Veterans

• Engage the field and provide awareness, training, and deployment preparation to new clinical information systems

• Advocate and represent the clinical staff on issues regarding the design, use, adoption, maintenance, and problem-resolution of clinical information systems

Value:

• Optimizes use of health information systems in the clinical environment.
• The processes for evaluating the impact of health information systems on clinical processes within the health care environment.
Bar Code Resource Office (BCRO)

FUNCTIONS

• Responsible for aligning clinical/business operations with point-of-care bar code scanning technology solutions (Bar Code Medication Administration (BCMA) and Bar Code Expansion-Positive Patient Identification (BCE-PPI)) and measuring overall performance
• Develops problem resolution based on research and best practices
  – Major services include field coordination through appropriate facility BCMA and BCE coordinators for a unified approach by Nursing, Pharmacy, Laboratory, and other ancillary services at the facility level
  – Promotes optimal use of the clinical bar code applications for medication administration, the transfusion of blood products, and the collection of laboratory specimens
• Provides the clinical and technical expertise required to gather and analyze data; tracks and trends results, and creates optimal process improvement plans to enhance the overall business management process associated with BCMA and BCE-PPI applications

Value: Ensures a standardized system-wide approach for bar code clinical applications, facilitating centralized leadership through coordination with stakeholders, collaboration of strategic direction, and provision of business operational support.
Health Informatics Initiative (hi2)

**FUNCTIONS**

- Integrates information and technology in the delivery of health care
- Provides an organizational foundation for re-engineering existing processes and piloting VHA clinical software prototypes in a rapid, agile, and iterative fashion
- Develops the Health Informatics workforce and enhances organizational informatics literacy through competency, career, and community development
- Develops communication and change strategies to establish an initiative-wide roadmap, strategy, methods, tools, products, and other communication and positioning vehicles

**Value:** Promotes and fosters open, transparent communication between health care providers and software development teams through shared responsibility and accountability.
Human Factors (HF)

SERVICES

- User Interface Design
- Usability Testing and Validation
- User Experience Consultation
- Human Factors Education
- Technology Assessments and Trending
- Informatics Research & Design Center management

Value: We provide value to Veterans, caregivers, and clinicians by exploring ways to optimize the user experience with VHA health information systems.
Informatics Patient Safety (IPS)

FUNCTIONS

- Applies a systematic assessment process emphasizing analysis, understanding, and feedback into the information technology engineering process.
- Manages submission of patient safety concerns into a tracking database; confirms resolution of issues and early detection of patterns.
- Applies safety principles that are based on human factors engineering, reflecting best practices such as user-centered design, and supporting standardized testing and release programs.
- Provides training and education programs to establish an organizational culture of safety within the health care information technology community.

Value: The processes and standards for evaluating the impact of health information technology on clinical processes.
Interagency Program Office (IPO) Staff Office

FUNCTIONS

• VHA’s Virtual Lifetime Electronic Record Health Line of Business
• IPO lead for information technology and business EHR interoperability between VistA and private health care entities using specifications and protocols of the eHealth Exchange (formerly Nationwide Health Information Network or NwHIN), as a member of the eExchange and for the Direct Project. Provides vocabulary and terminology services for Medical, Nursing, Veterans Health Information Model, and other federal sector terminology groups for use by VA and the iEHR.

Value: Interoperability facilitates information exchange to improve care coordination, increase efficiency, and ultimately results in cost reduction.
Knowledge Based Systems (KBS)

FUNCTIONS

• **Clinical Decision Support** includes computerized alerts and reminders, clinical guidelines, order sets, patient data reports and dashboards, documentation templates, diagnostic support, and clinical workflow tools

• **Cognitive support** places the raw data into context in ways that make clinical sense for a particular patient

• KBS helps the field maximize use of current capabilities, develops near term capabilities (Hospital-Acquired Pressure Ulcer and Venous Thromboembolism templates) and supports programs such as hi2 and iEHR, to deliver long term benefit

• Manages VHA Standards Engagement; produces standards through strategic engagement in Standards Development Organizations

**Value:** Knowledge Based Systems improve clinical outcomes, processes, and documentation.
Veterans and Consumer Health Informatics (V/CHIO)

FUNCTIONS

• Integrates the end user in the product life cycle as well as the strategic planning process
• Provides Veteran consumable, clinically objective, and relevant wellness and health content
• Transforms the Veteran’s experience by educating and empowering patients, their families, and caregivers to ensure a more holistic, Veteran-centered view and coordination of care
• Implements strategies to remove barriers to adoption and use, impact on system utilization measures, and impact on health and behavior
• Serves as liaison to My HealtheVet VA Medical Center coordinators and clinical champions

Value: Collaboration with major diversified stakeholders to develop the Blue Button with the Centers for Medicare and Medicaid Services and the Department of Defense.
The integrated Electronic Health Record (iEHR)
"Too many wounded warriors go without the care that they need. Too many Veterans don't receive the support that they've earned. It's time to change all that; it's time to give our Veterans a 21st Century VA.

Under the leadership of Secretary Gates and Secretary Shinseki, the Department of Defense and the Department of Veterans Affairs have taken a first step towards creating one, unified lifetime electronic health record for members of our Armed Services that will contain their administrative and medical information from the day they first enlist to the day that they are laid to rest...

...and that's why I'm asking both Departments to work together to define and build a seamless system of integration with a simple goal. When a member of the Armed Forces separates from the military, he or she will no longer have to walk paperwork from a DoD duty station to a local VA health center. Their electronic records will transition along with them and remain with them forever."

President Barack Obama
April 9, 2009
What is the iEHR Program?

The iEHR program is a collaborative partnership between VA and DoD to acquire and modernize joint health care information systems and achieve significant improvement in the capturing, storing, and sharing of electronic health information with an overall goal of improving patient care, system performance, and user experience.
DoD and VA Strategic Goals

VA/DoD Joint Executive Council Goal: High Quality Health Care
“Improve the access, quality, effectiveness and efficiency of health care for beneficiaries through collaborative activities.”

**Military Health System Quadruple Aim**
- Readiness
- Population health
- A positive patient experience of care
- Responsibly managing the total cost of health care

Quadruple Aim is implemented through a series of strategic initiatives, such as:
- Implement DoD/VA joint strategic plan for mental health to improve coordination
- Improve measurement and management of population health
- Implement evidence-based practice to improve quality and safety
- Implement Patient-Centered Medical Home
- Implement Pay for Value Programs
- Implement a modernized electronic health record to improve outcomes and enhance interoperability

**VA Strategic Plan Major Initiatives Related to Health Care**
- Enable 21st Century benefits delivery and services
- Create a Virtual Lifetime Electronic Record
- Improve Veterans’ mental health
- Design a Veteran-centric health care system model to help Veterans navigate the health care delivery system and receive coordinated care
- Enhance the Veteran experience and access to health care
- Improve the quality of health care while reducing costs
- Transform the delivery of health care delivery through health informatics
Evolution of DoD/VA Electronic Health Records
Why iEHR? Clinical

• Create a system more responsive to patient and staff needs
• Access comprehensive information on a patient from all sites of past care
• Incorporate current knowledge and principles from fields of human computer interaction, human factors analysis, usability, and cognitive science to improve user experience
• Expand resources for patients and caregivers
• Expand capabilities to assess and address population health issues
• Support expanded collaborative program development and sharing between VA, DoD, and other federal and Non-federal health care partners
Why iEHR? Technical

- Presented through a common, configurable user interface
- Centered on an open, standards based, tiered architecture of applications, services, and a common information interoperability framework
- Offers opportunity to adopt, buy, and build
- Implements national standards to promote interoperability and health information exchange
- Promotes collaboration and innovation through Open Source Electronic Health Record Agent
February 5, 2013

- Janus deployment
- Data interoperability
- Identity management
- Medical Community of Interest
- Commitment to Initial Operating Capability
  - 2 years - 2014
  - 2 sites (Hampton Roads and San Antonio)
  - 2 clinical capabilities (Laboratory and Immunizations)
  - 1 North Chicago (Pharmacy)
iEHR Governance

Acronyms
BEC – Benefits Executive Council
BoD – Board of Directors
CEO – Chief Executive Officer
CSB – Community Service Board
DECPSEC – Deputy Secretary
ESB – Enterprise Service Bus
GUI – Graphical User Interface
HEC – Health Executive Council
HHS/ONC – Department of Health and Human Services / Office of the National Coordinator
JEC – Joint Executive Council
VCJCS – Vice Chairman Joint Chief of Staff
Questions?

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