POLL 1

Where do you work? Choose one.

• VHA employee
• VA OIT
• VHA contractor
• Federal employee, not VA
• Non-Federal
Objectives

• Share the VistA Evolution Program’s (VE) vision and plan for next generation VistA/CPRS

• Share known gaps in knowledge, and

• Engage the Health Services Research community in the VE.
Overview

Research in VistA Evolution
Merry Ward Merry.Ward@va.gov

VistA Evolution Program
Jonathan Nebeker

VistA Evolution Program Structure
Brenna Long
POLL 2

Role. Choose all that apply

• Health care provider
• Researcher/scientist
• VACO program office
• Informatics researcher
• None of the above
Overview

Research in VistA Evolution
Merry Ward Merry.Ward@va.gov

VistA Evolution Program
Jonathan Nebeker

VistA Evolution Program Structure
Brenna Long
Evolving from patient record system to health management
Research Needs: Theoretically Driven Evidence-Based Models

Just a few examples of what need to know to build better systems:

**Cognitive Processing**
- Understand complex cognitive processing across domains and across individual and social systems
- Theories and models for organizing and presenting data and knowledge to facilitate deep cognitive processing.

**Knowledge Management and Engineering**
- “N of 1” data analytics across time and conditions

**Research Methods Development**
- Apply system data to develop novel and efficient methods for determining efficacy, effectiveness, and safety, as well as learning, surveillance and knowledge/best practice maintenance.
Role of research

• Drive VistA Evolution Program (VE) with forward thinking, visionary research
• Apply theoretical social and cognitive models to informatics development
• Fill knowledge gaps with empirical knowledge
• Elucidate knowledge gaps
Communications

Merry Ward
  – Merry.ward@va.gov
  – 202 701 0852 or 919 977 5385

Join the new Listserv
  VA_HEALTH_INFORMATICS-L@LISTSERV.VA.GOV

Schedule a session
  – Call or email me to schedule a session: research teams, centers, COINs
Overview

Research in VistA Evolution
   Merry Ward

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   Jonathan Nebeker

VistA Evolution Program Structure
   Brenna Long
Poll 3

VistA Evolution. Choose one.

• Had not heard of VistA Evolution Program until I saw this Cyberseminar
• Had heard of, but am not very familiar with VistA Evolution
• Have prior understanding of VistA Evolution Program
• Engaged with VistA Evolution or VistA Evolution program development
VistA Evolution

- Vista Evolution is a **VA Program** lead jointly by the Office of Information and Technology (OIT) and the Veterans Health Administration (VHA).
- The **VistA Evolution program** will modernize VistA to serve business needs and to support clinical and infrastructure content to fulfill the objective to deploy an EHR, with seamless electronic sharing of medical health data with DoD and private providers, and an integrated data display.
- The first **VistA Evolution product, VistA 4** provides the infrastructure and open, extensible platform on which tools and services can be integrated in support of Veterans’ evolving needs, in pace with the technological landscape.

**History of VistA**

- **V1**: Decentralized Hospital Computer Program (DHCP)
- **V2**: Computerized Patient Record System (CPRS)
- **V3**: “Gold Disk” version of VistA
- **V4**: VistA 4 is the next evolution of open-standards-based, extensible VistA
Improve Value of Healthcare

- One shared care plan
- Task- and goal-based communication
- Distributed decision making
- Population management

Team-Based

- Explicit link to patient goals and preferences
- Plans tailored to patient goals
- Shared decision making and management

Patient-Centered

- Transactional collection of rich clinical data that links resources to activities and goals to outcomes
- Support “Lean-type” management

Quality-Driven

- Fill gaps to support care coordination and Patient Aligned Care Teams
VistA Evolution – VistA 4 Product Vision

By 2017, we will have an architecture and framework that supports interoperability, care coordination, meaningful use and partnership.

Acronyms:
- DoD – Department of Defense
- IHS – Indian Health Service
- VBA – Veterans Benefits Administration
## VistA Evolution Road Map

<table>
<thead>
<tr>
<th>Year</th>
<th>Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>Initial Care Management Capabilities</td>
</tr>
<tr>
<td></td>
<td>Advanced UI Tools</td>
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<tr>
<td></td>
<td>VA/DoD Information Sharing (via Joint Legacy Viewer)</td>
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<td>Back-end Immunization Modules</td>
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<td></td>
<td>VistA Standardization</td>
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<tr>
<td>2015</td>
<td>Core Care Management</td>
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<tr>
<td></td>
<td>Integration of DoD and external provider data</td>
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<tr>
<td></td>
<td>Clinical Improvements for Patient-safety, Decision Support, Communication, and Population Health</td>
</tr>
<tr>
<td></td>
<td>A new, ONC certified, EHR platform at alpha sites</td>
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<tr>
<td></td>
<td>Enterprise deployment of view-only enterprise Health Management Platform (eHMP)</td>
</tr>
<tr>
<td>2016</td>
<td>Interoperability and Improved Clinical Capabilities</td>
</tr>
<tr>
<td></td>
<td>Meaningful, real-time exchange of information with DoD and external providers</td>
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<td></td>
<td>Broad deployment of eHMP (ONC Certified)</td>
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<tr>
<td></td>
<td>Initial deployment of Laboratory Information System (LIS) to 2 sites</td>
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<tr>
<td></td>
<td>Clinical improvements to include patient goals, enhancements to pharmacy and radiology</td>
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<tr>
<td>2017</td>
<td>Care Coordination</td>
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<tr>
<td></td>
<td>Full scale deployment of Laboratory Information System (50 VAMC/year)</td>
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<tr>
<td></td>
<td>Enterprise-wide deployment of eHMP</td>
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<td></td>
<td>Clinical improvements including planning tools that support patient-centered care plans and improved communication tools</td>
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<tr>
<td>2018</td>
<td>Colleague EHR (Gartner Gen 4)</td>
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<tr>
<td></td>
<td>Delivery of all new VistA 4 capabilities throughout the enterprise</td>
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<tr>
<td></td>
<td>Laboratory Information System (50 VAMC/year)</td>
</tr>
<tr>
<td></td>
<td>Completion of care coordination and quality management capabilities consistent with Gartner Gen4</td>
</tr>
</tbody>
</table>
HMP: Medication Review, Infobuttons, Search

Notional/Source: HMP
VistA 4 Product Vision, FY 17

• Support for care coordination: patient-centric, team-based care with capabilities for quality improvement
• New user experience with multifaceted support for understanding and decisions that speed use of EHR and improve quality of clinical reasoning
• Pharmacy management, laboratory information systems and radiology enhancements
• Meaningful Use demonstration & EHR certification
• Capability for technical, semantic and process interoperability

  Structured Data Capture   Radiology Protocoling
  Medication Reconciliation  Patient Secure Messaging
  Annotation               Provider Secure Messaging
  Patient Lists            ePrescribing
VistA 4 Metrics

• Quantifiable metrics will be established to evaluate Program effectiveness and specific benefits, such as:
  – Enhanced functionality with technical applications/capabilities
    • Allow the care team to more efficiently assess and diagnosis each patient, proactively identifying care options through population analytics
  – Improved operational efficiency
    • Increase throughput by reducing inefficiencies in workflow and improving care coordination
  – Better Care Quality
    • A comprehensive care plan designed for each patient will enhance health outcomes
  – Improved patient safety
    • Upgraded applications to reduce patient safety events
  – Improved cost savings
    • Reduce duplicative tests and administrative overhead
• Improved customer satisfaction
  • Effective preventative care will result in an enhanced patient experience, with not only better outcomes but also less time spent in a care facility
Decision and Cognitive Support: Clinical Semantic Web
Decision and Cognitive Support: 
Active User Interface with Semantic Web
Decision and Cognitive Support: Theory driven, evidence based
Activity Management and Lean

• Templated processes
• Explicitly match resources to tasks
• Sequence tasks
• Resolve conflicts with goals and preferences
• Analyze outcomes to refine templates and policies
Activity Management: Explicit Processes & Task-based Communication
Activity Management
How this looks to clinicians
Examples of what we need help with

• Metrics aka Key Performance Indicators
  – Work with Product Effectiveness and our office
• Decision and Cognitive Support
  – Structured data entry
  – Translation of theory to design & theory-driven evaluation
  – Content: Knowledgebases and ontologies
  – Simulation at patient and population levels
  – Goal setting
  – Guideline deconfliction
• Activity Management & Business Process Engineering
  – N of 1 trials
Overview

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Jonathan Nebeker

VistA Evolution Program Structure
Brenna Long
Communication

• IPTs and governance structure is under development. POC for engagement with IPTs brenna.long@va.gov

• VistA Evolution Communication SharePoint site: http://go.va.gov/iq2a

• VistA Evolution Dashboard
  – Distributed weekly via email
  – Forum For Us (https://vaforumfor.us/docs/DOC-6166)
  – VistA Evolution SharePoint Site (http://go.va.gov/vista_evolution)

• VistA Evolution on ForumForUS
  – For access, email brenna.long@va.gov or juan.torrez@va.gov

• Research
  – Merry Ward, Ph.D. merry.ward@va.gov (202) 701-0852
    • VistA Evolution Research and Development Manager
    • VA_HEALTH_INFORMATICS-L@LISTSERV.VA.GOV
Product Management: Feature Driven Design Process

- Allows for substantial upfront design and *iteration* and evolution in development
- This is needed to deliver features requiring highly refined design for UI and UX controls, layout and interaction
Thank you! Are there any questions?

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VistA Evolution
Program Vision and
Associated Knowledge Gaps:
HSRD Cyberseminar
3 April 2014

OIA Health Informatics: Health Solutions Management
Merry Ward, MS, PhD
VistA Evolution Research and Development Manager
Brenna Long, MS
VistA Evolution Program Specialist
Jonathan Nebeker, MD, MS
Associate Chief Medical Informatics
• Backup slides
# Description of Basic Information Objects

<table>
<thead>
<tr>
<th>Object Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Condition/Health Concern</strong></td>
<td>Traditionally called problems, this category also includes ill-defined issues and other non-medical issues that may be patient-specific barriers to effective healthcare.</td>
</tr>
<tr>
<td><strong>Observation</strong></td>
<td>A directly observed or calculated finding. Implies a data-collection procedure that is associated with resources. Subtypes:</td>
</tr>
<tr>
<td></td>
<td>• Quantitative — Measureable as continuous, interval, or ordered value;</td>
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<tr>
<td></td>
<td>• Qualitative — Expressed as categorical value.</td>
</tr>
<tr>
<td><strong>Goal</strong></td>
<td>Goals have target ranges that can be ascertained as being met. Preferences help determine relative value of goals. Goal subtypes roughly map to healthcare stakeholders:</td>
</tr>
<tr>
<td></td>
<td>• Medical goals pertain to observations that the patient cannot perceive or is not a direct determinant of quality of life. Examples are blood pressure or cardiac risk.</td>
</tr>
<tr>
<td></td>
<td>• Functional goals pertain to outcomes that patients perceive and directly pertain to functional status and quality of life. They can also be aspirations. Examples are pain levels, maximizing lifespan, maximizing quality of life, and minimizing cost to patient.</td>
</tr>
<tr>
<td></td>
<td>• Society goals pertain to public health and public policy. Examples are herd immunity or reduction in healthcare expenditures.</td>
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<tr>
<td></td>
<td>• Payer goals are not typically considered now in the practice of medicine. The notable exception is readiness for duty in DoD.</td>
</tr>
<tr>
<td></td>
<td>• Health-system goals. Examples are minimizing costs to the system, maximizing reimbursement, or training clinicians.</td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
<td>Represent resources and activity for changing patient’s health concerns. Some interventions are facilitators of others.</td>
</tr>
<tr>
<td><strong>Physiological/Psycho-social Effect</strong></td>
<td>This is the mechanism by which interventions affect patient health and healthcare. This concept is part of National Drug File Reference Terminology. It helps with causal modeling of healthcare processes and links interventions to observations. For many displays, this object category will be hidden from the user.</td>
</tr>
</tbody>
</table>