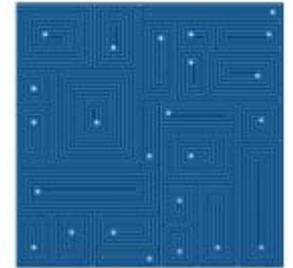


VistA Evolution Program Vision and Associated Knowledge Gaps: HSRD Cyberseminar 3 April 2014



OIA Health Informatics: Health Solutions Management

Merry Ward, MS, PhD

VistA Evolution Research and Development Manager

Brenna Long, MS

VistA Evolution Associate VHA Program Manager

Jonathan Nebeker, MD, MS

Associate Chief Medical Informatics Officer



U.S. Department of Veterans Affairs

VistA Evolution

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

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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

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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

VistA Evolution Program

Jonathan Nebeker

VistA Evolution Program Structure

Brenna Long

Poll 3

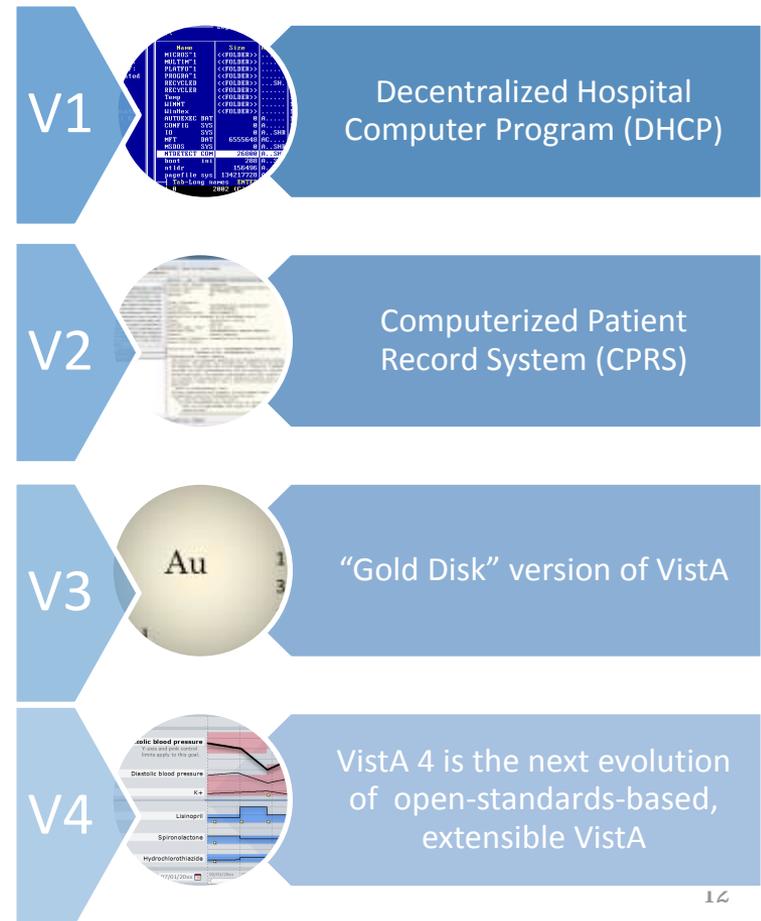
VistA Evolution. Choose one.

- 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



Improve Value of Healthcare

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

Team-
Based



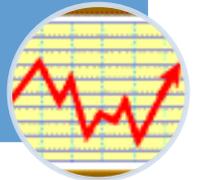
- Explicit link to patient goals and preferences
- Plans tailored to patient goals
- Shared decision making and management

Patient-
Centered



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

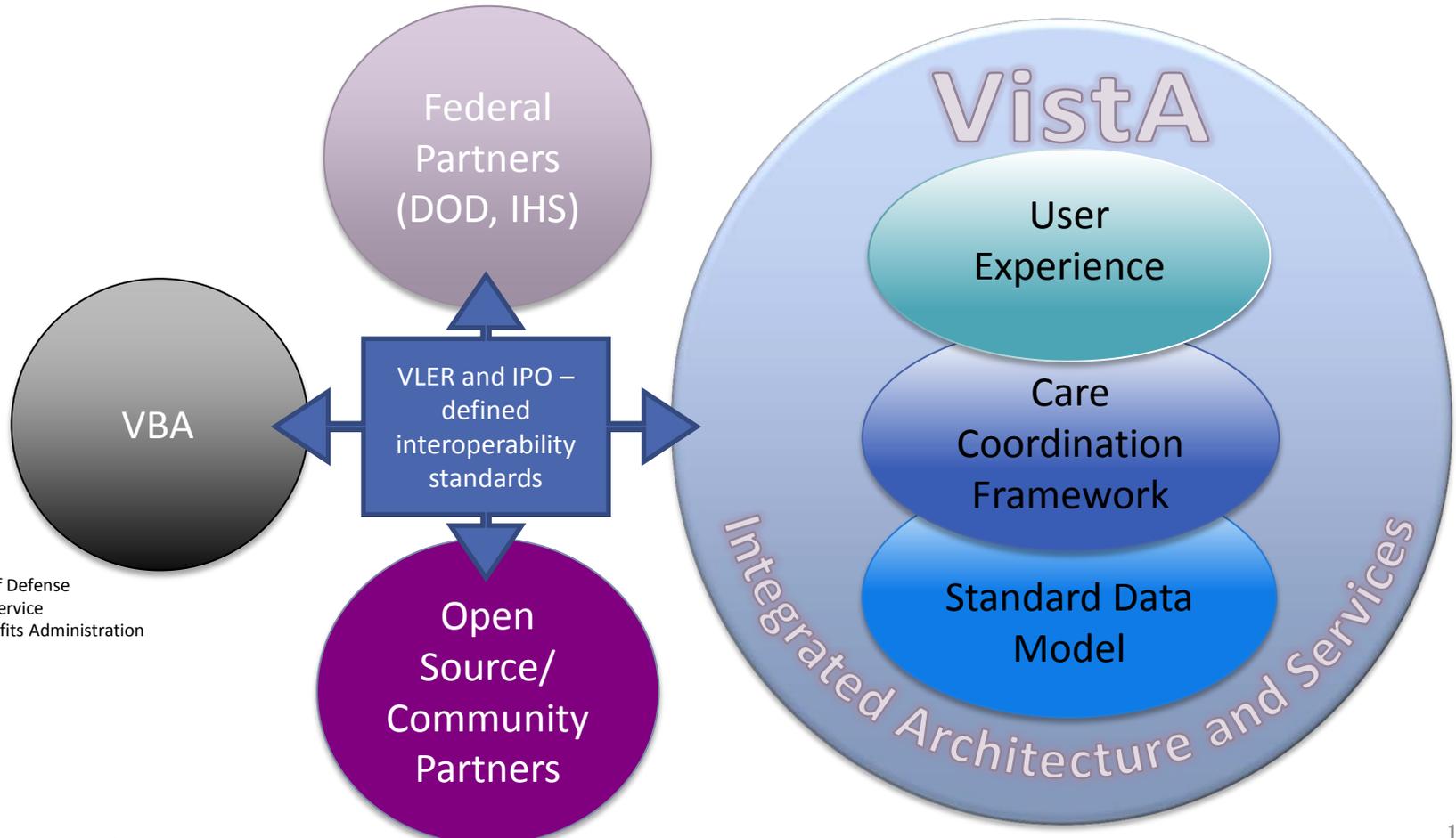
Quality-
Driven



- 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

2014

Initial Care Management Capabilities

Advanced UI Tools
VA/DoD Information

Sharing (via Joint Legacy Viewer)

Back-end Immunization Modules

VistA Standardization

2015

Core Care Management

Integration of DoD and external provider data

Clinical Improvements for Patient-safety, Decision Support, Communication, and Population Health

A new, ONC certified, EHR platform at alpha sites

Enterprise deployment of view-only enterprise Health Management Platform (eHMP)

2016

Interoperability and Improved Clinical Capabilities

Meaningful, real-time exchange of information with DoD and external providers

Broad deployment of eHMP (ONC Certified)

Initial deployment of Laboratory Information System (LIS) to 2 sites

Clinical improvements to include patient goals, enhancements to pharmacy and radiology

2017

Care Coordination

Full scale deployment of Laboratory Information System (50 VAMC/year)

Enterprise-wide deployment of eHMP

Clinical improvements including planning tools that support patient-centered care plans and improved communication tools

2018

Colleague EHR (Gartner Gen 4)

Delivery of all new VistA 4 capabilities throughout the enterprise

Laboratory Information System (50 VAMC/year)

Completion of care coordination and quality management capabilities consistent with Gartner Gen4

HMP: Medication Review, Infobuttons, Search

Outpatient Pharm Patient List Inpatient Pharmacy testing
Position Clinical Pharmacist Board

Hmp, Thirty 666-00-0010
Apr 07, 35 78 M
PSYCHIATRY 5-A
Primary Care Team Unassigned
Attending Attending, Geriatrics

Select Team Multi-Patient Split Patient

New Task New Order

More

Group/Sort

- Inpatient
- Outpatient

ACETAMINOPHEN
Last Filled

ASCORBIC ACID
Last Filled

ASPIRIN
Last Filled

DIGOXIN
Last Filled

FUROSEMIDE
Last Filled

SIMVASTATIN
Last Filled

SPIRONOLONE
Last Filled

TAMSULOSIN
Last Filled

Non-VA

CLONAZEPAM

COAL TAR SHAMPOO TOP 3XW ACTIVE (Non VA) Stop Date Apr 23, 13

FINGERSTICK GLUCOSE (BLOOD) 127H mg/dL 30 more
Feb 28, 13 07:33 - Laboratory - SLC-FO HMP DEV

GLUCOSE (SERUM) 119H mg/dL 21 more
Feb 27, 13 09:13 - Laboratory - SLC-FO HMP DEV

URINE GLUCOSE (URINE) 3+ mg/dL 1 more
May 30, 12 13:33 - Laboratory - SLC-FO HMP DEV

Discharge Summary
...) **GLUCOSE**: 119 (02/27/13 09:13) K: 4.1 (02/27/13 09:13) NA...
Mar 01, 13 11:42 - Discharge Summary - SLC-FO HMP DEV

FINGERSTICK GLUCOSE FINGERSTICK BLOOD WC LB #1900
Feb 28, 13 07:33 - Order - SLC-FO HMP DEV

FINGERSTICK GLUCOSE FINGERSTICK BLOOD WC LB #1900
Feb 27, 13 21:02 - Order - SLC-FO HMP DEV

ATTENDING NOTE
... 09:13) CREAT: 1.1 (02/27/13 09:13) **GLUCOSE**: 119 (02/27/13...
Feb 27, 13 10:40 - Progress Note - SLC-FO HMP DEV

2012 2013

2013 2014

2013 2014

2013 2014

2013 2014

2013 2014

2013 2014

Notional/Source: HMP

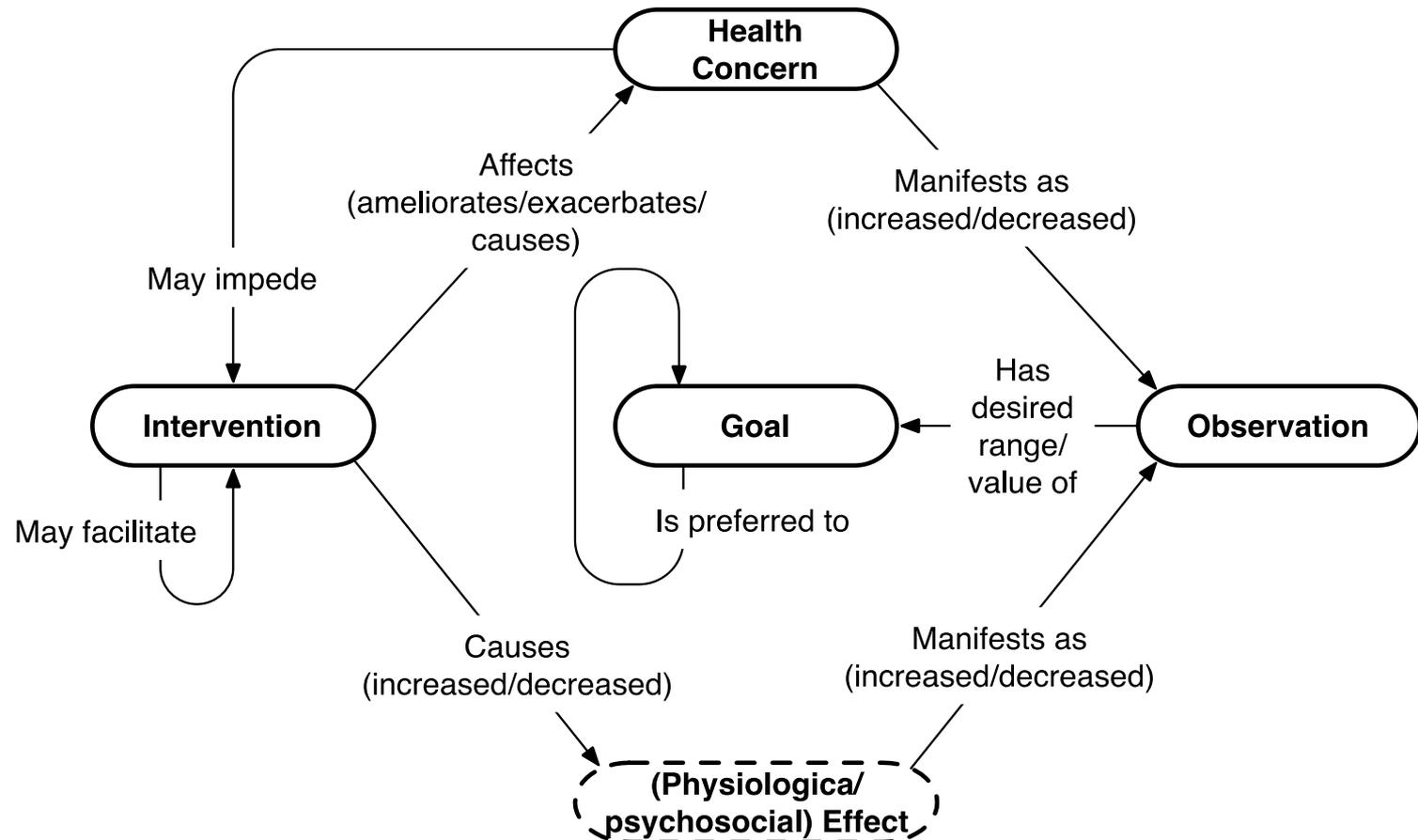
VistA 4 Product Vision, FY 17

- 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
 - Medication Reconciliation
 - Annotation
 - Patient Lists
 - Radiology Protocoling
 - Patient Secure Messaging
 - Provider Secure Messaging
 - ePrescribing

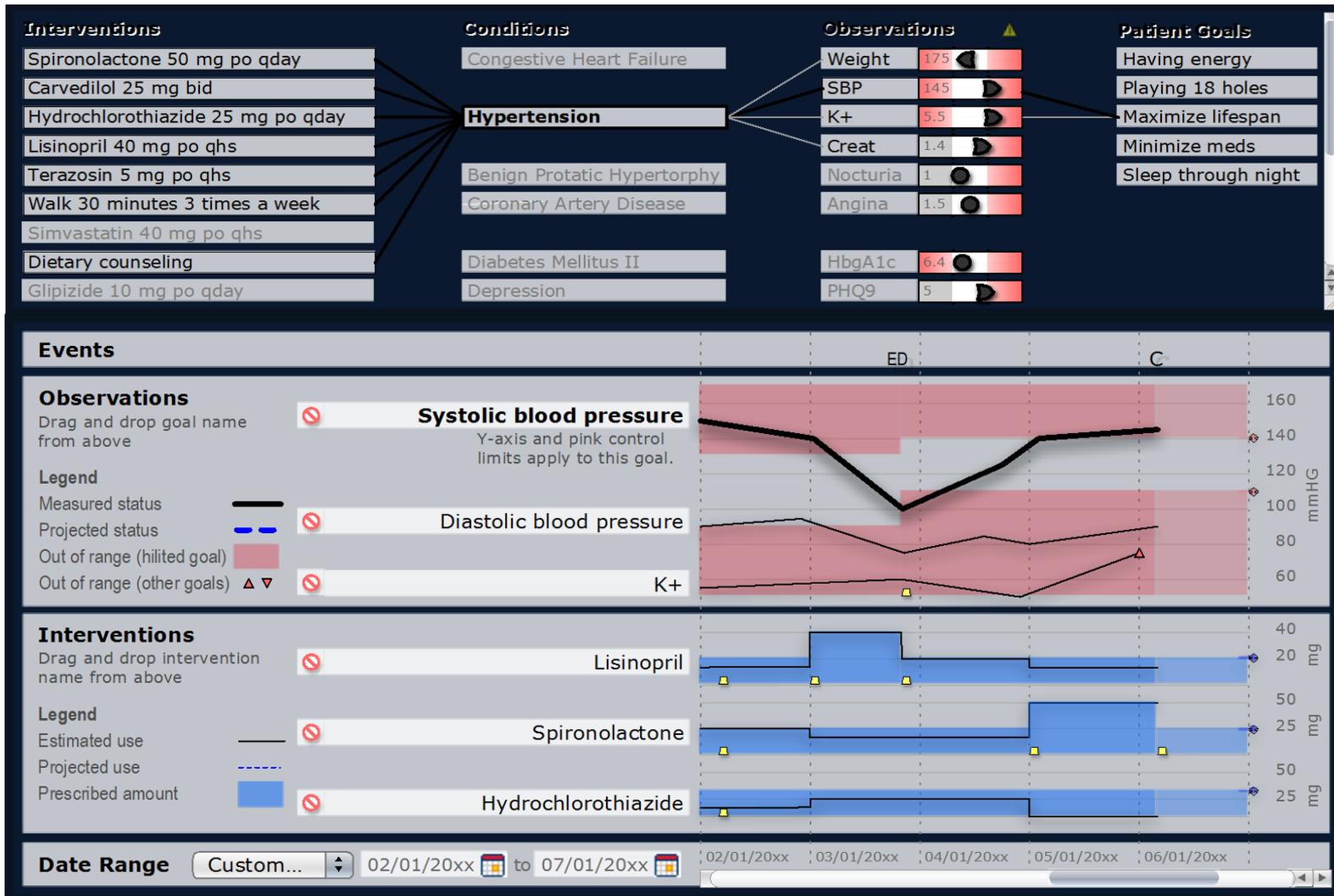
VistA 4 Metrics

- 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

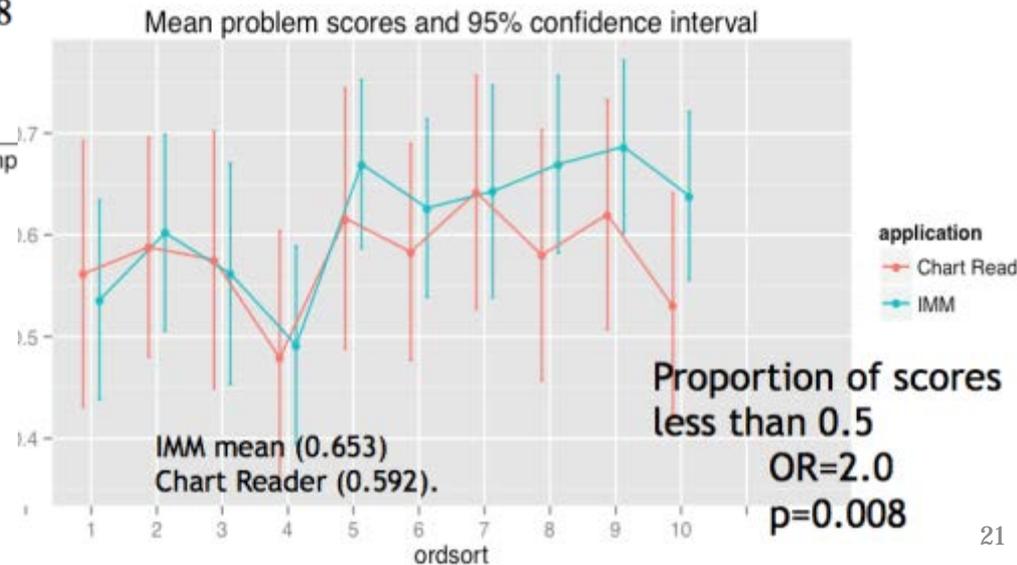
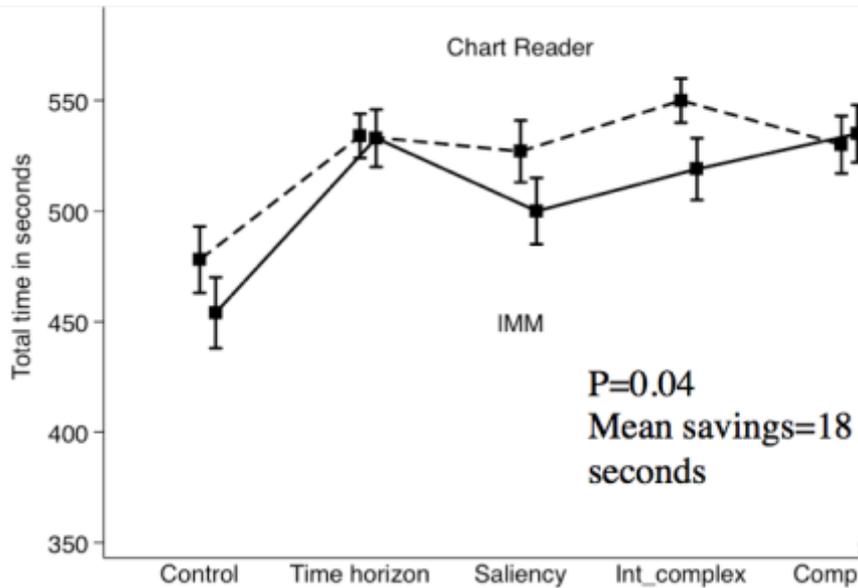
Decision and Cognitive Support: Clinical Semantic Web



Decision and Cognitive Support: Active User Interface with Semantic Web

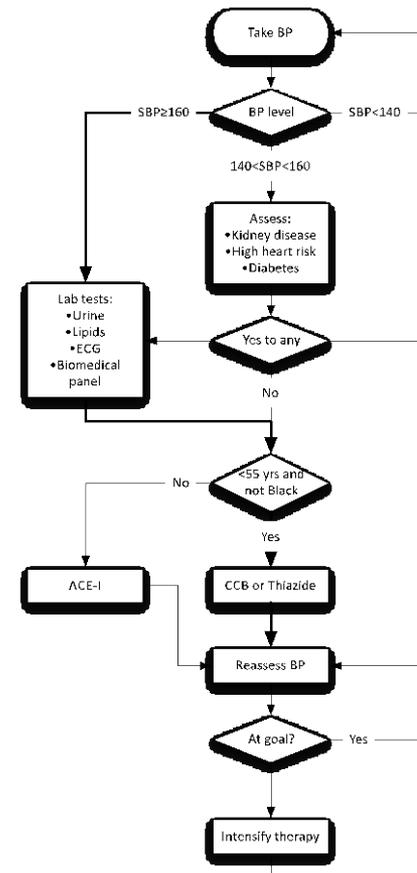


Decision and Cognitive Support: Theory driven, evidence based

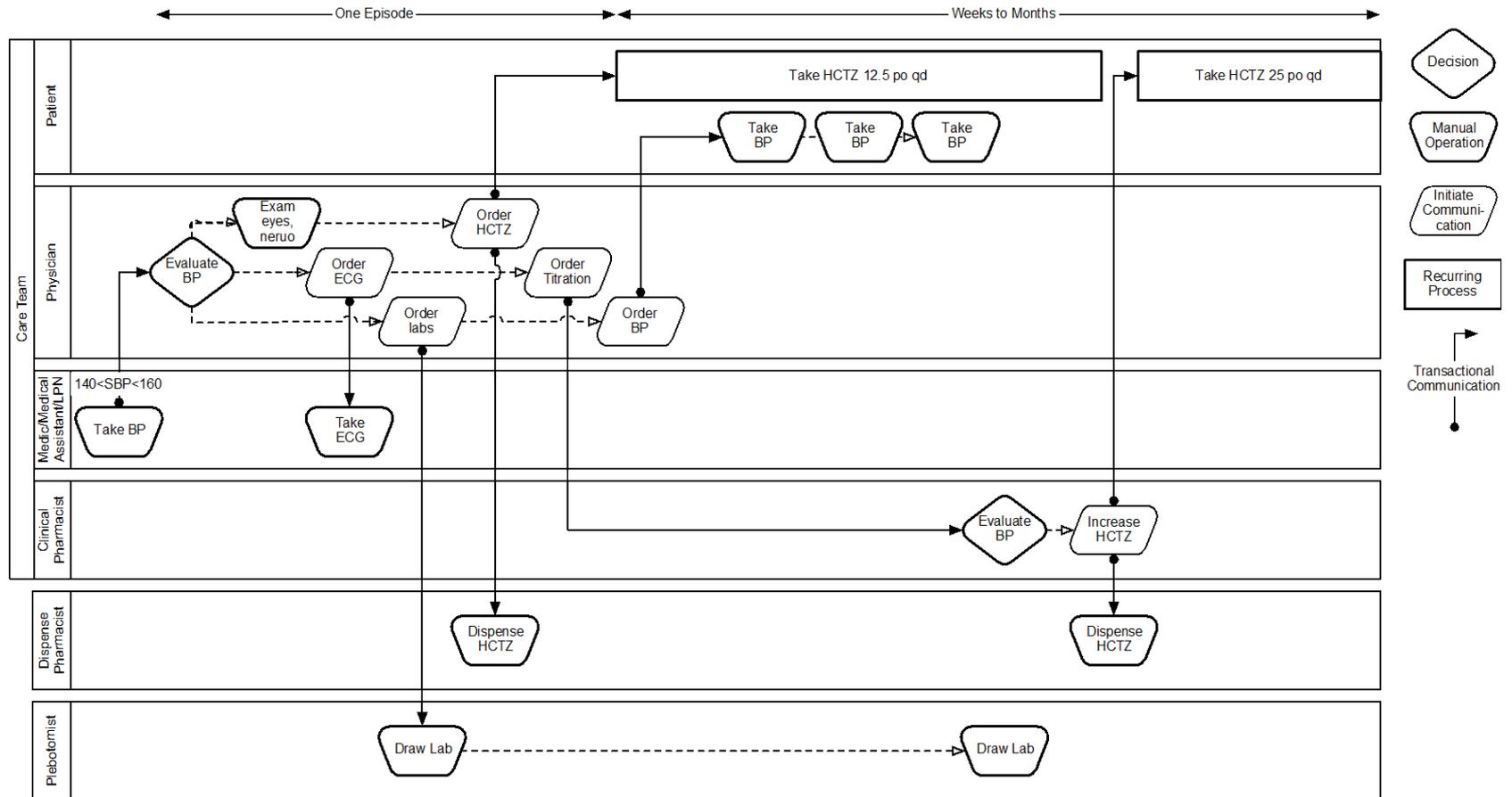
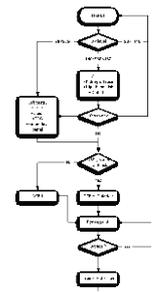


Activity Management and Lean

- 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



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

Research in VistA Evolution

Merry Ward

VistA Evolution Program

Jonathan Nebeker

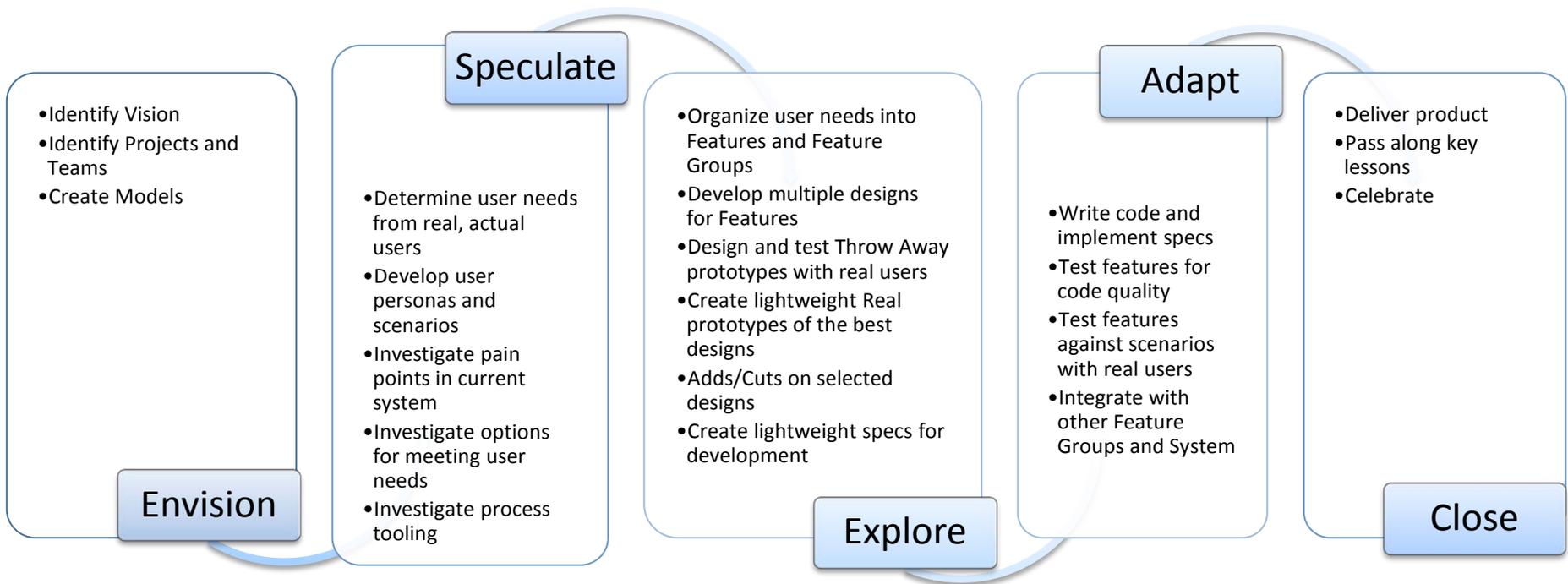
VistA Evolution Program Structure

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

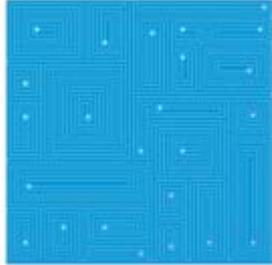
Thank you! Are there any questions?

Merry Ward, Merry.Ward@va.gov

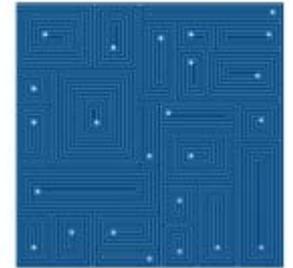
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OIA Health Informatics: Health Solutions Management

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U.S. Department of Veterans Affairs

VistA Evolution

- Backup slides

Description of Basic Information Objects

Object Category	Description
Condition/Health Concern	Traditionally called problems, this category also includes ill-defined issues and other non-medical issues that may be patient-specific barriers to effective healthcare.
Observation	A directly observed or calculated finding. Implies a data-collection procedure that is associated with resources. Subtypes: <ul style="list-style-type: none"> Quantitative — Measureable as continuous, interval, or ordered value; Qualitative — Expressed as categorical value.
Goal	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: <ul style="list-style-type: none"> 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. 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. Society goals pertain to public health and public policy. Examples are herd immunity or reduction in healthcare expenditures. Payer goals are not typically considered now in the practice of medicine. The notable exception is readiness for duty in DoD. Health-system goals. Examples are minimizing costs to the system, maximizing reimbursement, or training clinicians.
Intervention	Represent resources and activity for changing patient's health concerns. Some interventions are facilitators of others.
Physiological/Psycho-social Effect	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.