VA Enterprise Health Management Platform
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The Vision for VistA Evolution

Improve Value of Healthcare: Health Equity

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

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

Quality-Driven
- Transactional collection of rich clinical data that links resources to activities and goals to outcomes
- Support “Lean-type” management
VistA 4 Product Roadmap

2014 2015 2016 2017 2018

Colleague EHR (Gartner Gen 4)

Care Coordination

Interoperability and Improved Care Management

Core Care Management and Office of National Coordinator (ONC) Certification

Initial Care Management Capabilities

Gen 4: Advanced systems that provide substantial functionality for nurses, physicians and pharmacists; have more decision support and workflow capabilities along with tools that permit providers to more easily bring Evidence Based Medicine to the point of care.
Enterprise Health Management Platform (eHMP)

- **Vista Exchange**
  - Clinical Decision Support
  - Context Persistence
  - Orders Selection Service
  - Orders Management Service
  - Data Annotation Service
  - Clinical Workflow
  - Concept Relationship Service
  - Documentation and Text Search Service
  - Business Rules Management System

- eHMP Services
  - Middle tier Components

- eHMP CPE (Clinical Practice Environment)
  - Front End Application

- eHMP Clinical Practice Environment

-=jlv View
- CPRS Features
- HMP IOC Features
- ONC Certification Features

Draft
eHMP Clinical Practice Environment (CPE) will provide end user clinical encounter and care coordination transaction capabilities, data visualization, and decision support integration between Provider, Patient, and System facing components and devices. Different capability configurations will be available based on user roles. eHMP will:

- become the eventual CPRS replacement
- maintain the joint VA/DoD JLV functionality
- provide new clinical functionality
- be used for ONC 2014 edition certification
Users will recognize the Enterprise Health Management Platform CPE interface as their single point of care application for patient care needs.
VistA Exchange and eVPR

- **VistA Exchange** is the VistA 4 *clinical* application data services engine, providing an *enterprise* Virtual Patient Record service (eVPR) optimized for the *enterprise* Health Management Platform (eHMP) and other point of care applications and workflows.

- **eVPR** includes information model binding, terminology normalization, knowledge enrichment, and search indexing for all available longitudinal patient record data aggregated from VA, DoD, and exchange partner sources.
Modularity and SDK in eHMP

- Development modularity and services exist at multiple levels – user interface, middle tier and data levels
- **Software Development Kit (SDK)** will be made available to the community.
- The **SDK** is comprised of:
  - **Application Development Kit (ADK)** to drive development of the client-side web application. Build using JavaScript, backbone.js, marionette, bootstrap. Resulting application is SPA, static HTML served from web server (no J2EE server)
  - **Resource Development Kit (RDK)** to drive the development of service side resources (web services) to support the web application. Build using JavaScript, express.js. Deploy to node.js; relies on npm for package management.
eHMP Application Development Kit (ADK)

- **ADK provides mechanisms for applet developers to**
  - Discover the current patient
  - Fetch patient data from vista exchange, can use canonical model (based on VPR) or provide custom "view" model
  - Bind data to backbone views, provide templating
  - Choose preselected display paradigms (tableview, etc) and UI controls. UI style set by application
  - Create three different "size" views to support responsive / adaptive design

- **ADK provides mechanisms for screen designers to**
  - Create a screen, choose from predefined layouts and assign applets to regions

- **ADK provides for application designers**
  - Runtime UI shell for application. Displays current patient, current user. Provides navigation
  - Mechanism to choose the screens that are part of the application

- **ADK also provides**
  - CI pipeline/devops for pulling applets/screen configurations from artifact repository, compiling, packing, testing, and publishing to artifact repository. This produces a CM-ed version of the web application (which includes specific version of applets)
eHMP Resource Development Kit (RDK)

- **Resource** = a single web service (e.g., save allergies)
- **Resource Family** = collection of resources
- **Resource Server** = deployable unit, including a family and configuration
- **RDK for resource developers**
  - Configuration of the resource family
    - For each resource, specifies relative mount path and method using standard express signature function(request, response, next)
    - Specifies resource characteristics (sensitive, audit information)
  - Request provides resource information about the request: url, path parameters, query parameters, header, current user, access to RDK utility methods, access to current resource server, configuration information, logger
  - Response provides resource ability to send response: status code, json or text body, media information
  - Resources with handles to common external systems, including JDS, VistA(s), solr search engine
eHMP Resource Development Kit (RDK)

- **RDK for deployment engineers when creating a resource server**
  - Group resources into a logical deployment unit called a resource server.
  - Specify how many processes using cluster/fork
  - Deployment engineer chooses which resource family should be registered using: (show code)
  - Resource Server deployed behind a reverse proxy (apache httpd) for load balancing
  - Ability to enable: authentication, authorization/PEP, audit
  - Specify logging rules, configuration, resource caching rules
  - Routes calls to resources based on URL and media type (content-negotiation)
  - Provides health check (binary and discrete information) based on each resource registered. Deployment engineer can specify additional health check rules.

- **RDK also provides**
  - Centralized dependency management
  - Automatic creation of resource directory
  - CI pipeline/devops for pulling applets/screen configurations from artifact repository, compiling, packing, testing, and publishing to artifact repository. This produces a CM-ed version of the web application (which includes specific version of applets)