Delivering Value to the Veteran: Advancing Informatics/ Data Infrastructure and Process Interoperability to Ensure a Single Standard Level of Care Across the VHA Enterprise during its 10-year EHR Modernization Effort

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What might the attendee be able to do after being in your session?

The Veterans Health Administration (VHA) is on a journey to transform care to our nation's Veterans. After more than four decades of using the VA's Computerized Patient Record System (CPRS) and the Veterans Information Systems Technology Architecture (VistA) electronic health record (EHR), the VA has procured and is in the process of implementing a commercial EHR product (Cerner Millennium). To maximize the value to the Veteran and to those who provide their care within the VHA, the Clinical Informatics and Data Management Office (CIDMO) serves as a leading VHA organizational element helping to drive the transition to a high-reliability learning organization through user-centered standardization of health information, clinical processes, and technologies. CIDMO delivers value to the clinical users in the field by providing expert national leadership in informatics and data management, delivering complete solutions, ensuring customer satisfaction, teaming with clinical and IT programs, and standardizing evidence-based best informatics practices. At the conclusion of this session, attendees will be able to a) describe CIDMO's plan to leverage Health Practice Patterns to re-engineer and standardize care across the enterprise, b) evaluate VHA's plans for establishing "test sites" to validate technical, process, and data interoperability efforts, and c) discuss CIDMO's informatics infrastructure activities to realign and maximize the roles and responsibilities of Clinical Application Coordinators, Health Information Specialists, and other VHA informatics professionals to support both the legacy and new EHR environments.

Description of the Problem or Gap
CIDMO has identified three challenges related to the VA's EHR modernization efforts. They are:

1) Non-standardized workflows and care processes across the enterprise;
2) Need to sustain legacy EHR functionality until the new EHR implementation is complete; and
3) Immature informatics infrastructure including potential informatics staffing shortfalls to support EHR operations due to retirement-eligible individuals and lack of a defined career path for existing staff.

Methods: What did you do to address the problem or gap?
To address the challenges associated with legacy EHR sustainment and modernization efforts, CIDMO is leveraging Health Practice Patterns (HPPs), platform-independent business process models that include the following features:

- clinical processes designed with system/process (re)engineering support;
- apps, forms, decision support, and other software or knowledge artifacts designed with human factors engineering;
- knowledge in the software (including the entire process pattern) encoded according to standards and informatics architecture that can be re-used in a variety of clinical and managerial workflows and simplify the Veteran and clinician experience (reliability);
- toolkits provided to address training and change management;

- entire process pattern encoded to be configurable to serve in various clinical practice guidelines in different clinical domains and to allow partially-automated regression testing (reliability);
- parameterized specifications provided to allow implementation of HPPs on different software platforms (i.e., VistA/CPRS and Cerner Millennium); and
- monitoring/evaluation of approaches specified to understand/encourage conformance (reliability) and positive/negative deviation (learning).

Results: What was the outcome(s) of what you did to address the problem or gap?
The colorectal cancer screening (CRCS) HPP has been implemented across the VHA enterprise and serves as the model for additional HPPs to maximize process and data interoperability. CRCS workflows have been standardized and the staff has been trained; EHR configurations to support clinical documentation, reminders, and reporting requirements have been implemented; and patient monitoring and outcomes are now being measured and reported on a recurring basis. Further, informatics staff have taken the lead in process and data governance activities that serve as change management imperatives for transitioning to the modernized EHR platform while maturing the informatics infrastructure within the VHA enterprise.

Discussion of Results
The development and implementation of enterprise-wide HPPs are demonstrating promising results for the VHA. HPPs are helping the VHA maintain a single standard level of care for Veterans, despite the concurrent use of two different EHRs. By curating solutions for legacy CPRS/VistA end users, along with the provision of turnkey process flows and evidence-based practices via HPPs, the VHA is re-engineering care delivery processes that allow VHA staff to safely adopt workflows that produce similar/consistent patient outcomes despite the implementation of disparate EHR configurations and integrations with commercial applications. VHA-approved new technologies, such as SMART on FHIR have been critical in developing a single HPP/Clinical Decision Support (CDS)/workflow deployable in both Cerner and Legacy environments. Finally, several career paths have been identified for informatics staff including Legacy VistA/CPRS Support (until the system is sunset) and Virtual VistA/CPRS Support.

Conclusion
HPPs are powerful platform-independent business process models that can be used to reengineer care delivery, support standardization of workflows and care processes, improve interoperability, and improve and simplify both Veteran and clinician experiences.

Attendee's Take-away Tool
Attendees who attend this session will leave with at least one example of a Health Practice Pattern that may be suitable for evaluation and implementation in their own care delivery environment.

Use of Knowledge Acquired at Previous AMIA Events
N/A