

Health eDecisions

Challenge

Clinical Decision Support (CDS) is the user facing representation of clinical guidance. Effective CDS interventions require availability of computable biomedical knowledge, person-specific data, and a reasoning or inference mechanism that combines these elements to generate and present helpful and actionable information to clinicians, individuals, or caregivers in the right way – at the right time. In order to optimize these benefits, CDS interventions must be made more easily shareable and implementable so that any organization can easily acquire and deploy CDS interventions. To this end, standards must be advanced to enable either the routine or regular consumption of CDS interventions through a Web service or the repeated import and update of CDS artifacts into CDS systems.

Scope Statement

To identify, define and harmonize standards that facilitate the emergence of systems and services whereby shareable CDS interventions can be implemented via:

- Standards to structure medical knowledge in a shareable and executable format for use in CDS, and
- Standards that define how a system can interact with and utilize an electronic interface that provides helpful, actionable clinical guidance

In order to facilitate integration of a system with CDS interventions, the scope includes standards to refer to data in electronic health records and standards to map recommendations to locally implementable actions.

Value Statement

Health information technologies designed to improve clinical decision making are particularly attractive for their ability to address the growing information overload clinicians face and to provide a platform for rapidly incorporating knowledge into care delivery. Standardized expressions of Clinical Decision Support have a number of important benefits including:

- Increased quality of care and enhanced health outcomes for individuals and populations
- Improvement in workflow
- Avoidance of errors and adverse events
- Improved efficiency, cost benefit, and provider and patient satisfaction
- Reduced latency for incorporating new clinical knowledge and evidence-based guidelines into clinical practice

Focusing the S&I Framework community on Clinical Decision Support through the Health eDecisions Initiative will enable the translation of interventions into implementable components, increasing the speed and ease of adoption by the provider community.

Implementation Guide Resources

IG Artifact	Date Uploaded	Description
Balloted DSS IG R1	9/3/2013	Final DSS IG Release 1 submitted to HL7 ballot on 8/31
Balloted vMR Templates IG R1	9/2/2013	Final vMR Templates IG Release 1 submitted to HL7 ballot on 8/31
Balloted vMR XML IG R1	9/2/2013	Final vMR XML IG Release 1 submitted to HL7 ballot on 9/2
Balloted vMR Logical Model Release 2	9/2/2013	Final vMR Logical Model R2 submitted to HL7 ballot on 8/31
Balloted vMR Logical Model Release 2 Supplementary Files	9/2/2013	Supplementary files submitted for HL7 ballot with vMR Logical Model R2 on 8/31
DSS Standard, Release 2	9/2/2013	Final DSS Standard R2 submitted to HL7 ballot on 8/4
CDS Knowledge Artifact, Release 1	9/2/2013	Final CDS Knowledge Artifact R1 submitted to HL7 ballot on 8/4

HL7 Artifacts

HL7 Artifact	Intended Use	Description	Use Case
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HL7 Implementation Guide: Clinical Decision Support (CDS) Knowledge Artifact Implementations, Release 1.1 (Draft Standard for Trial Use – DSTU)	CDS artifact implementers and users	XML schema for representing CDS knowledge artifacts (rules, order sets, and documentation templates)	Use Case 1: Clinical Decision Support Knowledge Artifact Implementation Guide
Decision Support Service Implementation Guide Release 1.1 (DSTU)	CDS guidance service implementers and users	Implementation guide for delivering CDS guidance as a Web service	Use Case 2: Decision Support Service Implementation Guide
Virtual Medical Record (vMR) Logical Model Release 2 (DSTU)	Implementers and users of CDS artifacts and guidance services	UML data model for the CDS domain. Used by the CDS Knowledge Artifact and Decision Support Service Implementation Guides	Use Case 1: Clinical Decision Support Knowledge Artifact Implementation Guide Use Case 2: Decision Support Service Implementation Guide
vMR XML Specification Release 1 (DSTU)	Implementers and users of CDS artifacts and guidance services	XML schema derived from the vMR Logical Model. Used by the CDS Knowledge Artifact and Decision Support Service Implementation Guides	Use Case 1: Clinical Decision Support Knowledge Artifact Implementation Guide Use Case 2: Decision Support Service Implementation Guide
vMR Templates Release 1 (DSTU)	Implementers and users of CDS artifacts and guidance services]]	Terminology bindings and other constraints placed on the vMR. Used by the CDS Knowledge Artifact and Decision Support Service Implementation Guides	Use Case 1: Clinical Decision Support Knowledge Artifact Implementation Guide Use Case 2: Decision Support Service Implementation Guide
Decision Support Service Release 2 (DSTU)	CDS guidance service implementers and users	Defines a Web service framework for CDS guidance services, including SOAP and REST interfaces. Used by Decision Support Service Implementation Guide	Use Case 2: Decision Support Service Implementation Guide

Target Outcomes

- Alignment with Meaningful Use
 - The product of this initiative will help providers achieve meaningful use of HIT and their quality improvement goals through addressing a known barrier to CDS development, adoption, and implementation
- Repositories or catalogues can emerge, supplied by a range of content creators such as societies or content vendors, whereby CDS artifacts can be selected and imported into HIT systems
 - Each intervention will represent a standardized expression of a guideline that can be accessed by EHR system developers and users to simplify the process of incorporating guidelines into EHRs
- Clinical Decision Support Services can interact with EHRs and/or other Health Information Technology implementations
- Alignment with other S&I Initiatives, e.g., Query Health (HQMF)
- Close the gap between standard availability and widespread use/value
- Perform outreach to medical professional societies and guidance authors to promote their development of CDS interventions in addition to traditional guideline publications

Timeline

Updated version of the deliverables and timeline can be found on the [Health eDecisions Homepage](#)

<ul style="list-style-type: none"> • Pre-Discovery: Complete <ul style="list-style-type: none"> ◦ Call for Participation • Discovery (Phase I): In Progress <ul style="list-style-type: none"> ◦ Finalize Project Charter ◦ Construct Use Cases & Functional Requirements ◦ Analyze Standards Gaps ◦ Engage Appropriate SDOs • Implementation (Phase II): Summer / Fall 2012 <ul style="list-style-type: none"> ◦ Create Harmonized Specifications ◦ Conduct Technology Evaluations ◦ Generate Reference Implementations ◦ Design Pilot Plan • Pilot (Phase III): Winter / Spring 2013 <ul style="list-style-type: none"> ◦ Create Pilot Technology ◦ Validate / Revise Specifications and Implementations • Evaluation (Phase IV): Spring 2013 <ul style="list-style-type: none"> ◦ Assess Outcomes ◦ Present Final Recommendations 	blocked URL
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