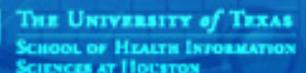
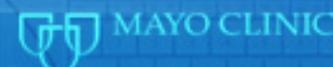
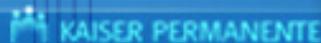


Clinical Decision Support Consortium Technical Expert Panel

Accomplishments, Challenges and Questions
Blackford Middleton, MD

September 1 – 2, 2010



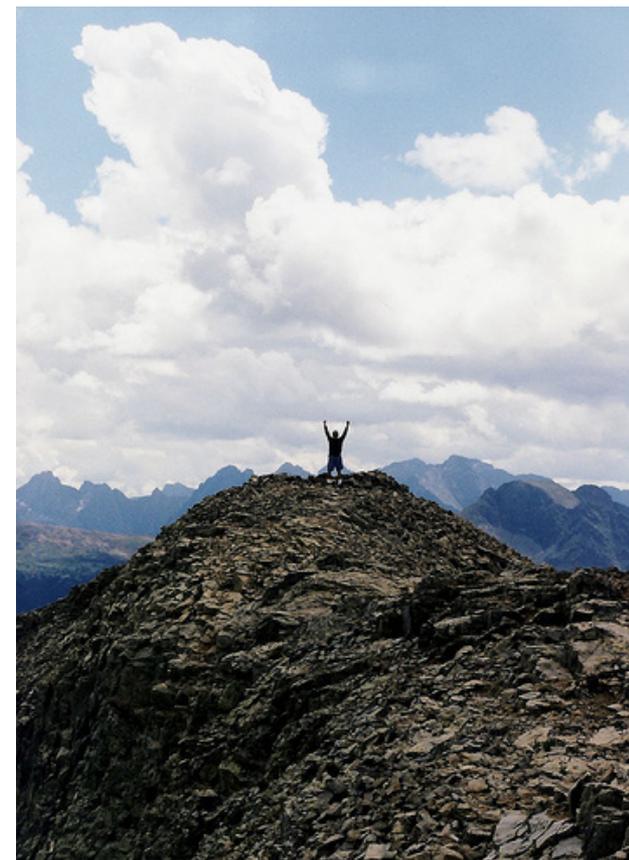
Agenda

- Review of Accomplishments (*Middleton*)
- Discussion of Knowledge Management and Lifecycle Assessment Team findings (*Sitting*)
- Discussion of Knowledge Translation and Specification Team findings (*Boxwala*)
- Next steps in OY1 and Questions for TEP (*Middleton*)

Accomplishments (1 of 6)

Research Management Team

- Completed and submitted remaining Base Years deliverables
- Completed and submitted revised OY1 proposal to AHRQ and received OY1 approval 7/9/2010
- Completed draft OY1 Work, Project, and Evaluation Plans
- Added Mayo Clinic to the CDSC Steering Committee
- Continued work with Partners Institutional Review Board (IRB) to update the status of CDSC IRB protocol



Accomplishments (2 of 6)

Knowledge Management Lifecycle Assessment (KMLA)

- Submitted paper “Clinical Decision Support and Knowledge Management in Community Settings: A Qualitative Study” to JAMIA
- Submitted paper “Rapid Assessment of Clinical Information Systems in the Healthcare Setting: An Efficient Method for Time-Pressed Evaluation” to *Method of Information in Medicine*
- Continued analysis of transcript data from previous site visits

Knowledge Translation and Specification Team (KTS)

- Completed development and documentation of beta version of guideline editing/authoring tool
- Submitted paper “A multi-layered framework for disseminating knowledge for computer-based decision-support” to JAMIA
- Defined metadata elements for use within the KM portal
- Started the process of reconstituting the *Joint Information Modeling* team to determine a long term solution for inclusion and use of CPT and ICD9 procedure codes within the CDS Service
- Continued work on collaboration project with GLIDES team.

Accomplishments (3 of 6)

Knowledge Management Portal Team (KM Portal)

- Continued work on eRoom Evaluation, completed eRoom assessment and collected responses for analysis
- Continued to serve in a support and maintenance role for the KM portal
- Summary statistics to date for the KM portal:

| KM Portal Statistics | |
|-------------------------------------|--|
| Total CDSC documents uploaded: | 35* |
| Unique IP addresses accessing site: | 39 |
| Most viewed document: | 2010 PHS L4 Coronary Artery Disease SNOMED Classification Subset |

**Statistics provided are raw data only. No analysis is provided, including comparison with previous data.*

Recommendations Team

- Revised recommendations for health information technology (HIT) vendors, professional societies, and clinical guideline developers and submitted to AHRQ

Accomplishments (4 of 6)

CDS Services Team

- Continued working on getting connectivity from RI to PHS through the PHS firewall and conducting Quality Assurance testing with a sampling of RI's test patient Continuity of Care Documents (CCDs)
- Clarified which data elements in the RI CCD need to be de-identified and which ones need to be accurate in order for the rules to run correctly
- Continued work on legal agreements. Received signed Data Sharing Agreement from RI
- Continued using ECRS in LMR trial clinics
- Summary statistics for the time period 06/21/10 - 07/13/10

Services Statistics

| | |
|------------------------|----------------|
| Total calls: | 61,845* |
| Average calls per day: | 2,811 |
| Average performance: | 2.221 |

**Statistics provided are raw data only. No analysis is provided, including comparison with previous data.*

Accomplishments (5 of 6)

Demonstrations Team

- Continued to engage with Regenstrief regarding the integration of CDS Services, demonstration study design, IRB, and technical considerations (e.g. problem and procedure terminologies, CCD representation, etc.)
- Coordinated with Service team on plans for evaluation and data management
- Continued data collection for PHS Longitudinal Medical Record (LMR) demonstration

Dashboards Team

- Turned on provider-view Dashboard for identified physician subset in the participating PHS clinical sites
- Identified initial subset of people for which the developer-view Dashboard will be turned on and discussed new evaluation techniques for this Dashboard
- Started revising the generic dashboard specification to be used by future sites implementing CDS dashboards
- Obtained additional data sets, modified the dashboard and completed testing to accommodate the additional clinicians added to the provider view dashboard

Accomplishments (6 of 6)

Evaluation Team

- Completed and submitted to AHRQ draft OY1 Evaluation Plan
- Continued to work with teams to ensure the evaluation metrics are uniformly measurable across site as evaluation activities begin to unfold

Content Governance Committee (CGC)

- Continued development of the CDSC Service Sharing Agreement
- Determined metadata required of publishers to fill out when submitting guideline content to the KM portal
- Discussed a potential framework for prioritization of reminders for implementation using AHRQ priority rules and quality measures from PQRI and HEDIS
- Continued work on Editorial Policy

Knowledge Management Team

- Reviewed the mappings from RI local problem codes to SNOMED-CT and expanded the problem subsets to include SNOMED-CT codes
- Coordinated efforts for completing two legal documents: Portal Publishing Agreement and Service Sharing Agreement

Clinical Decision Support Consortium: Knowledge Management and Lifecycle Assessment Team Discussion

Dean F. Sittig, PhD

Partners Healthcare, University of Texas, Houston

Original goal of these projects...

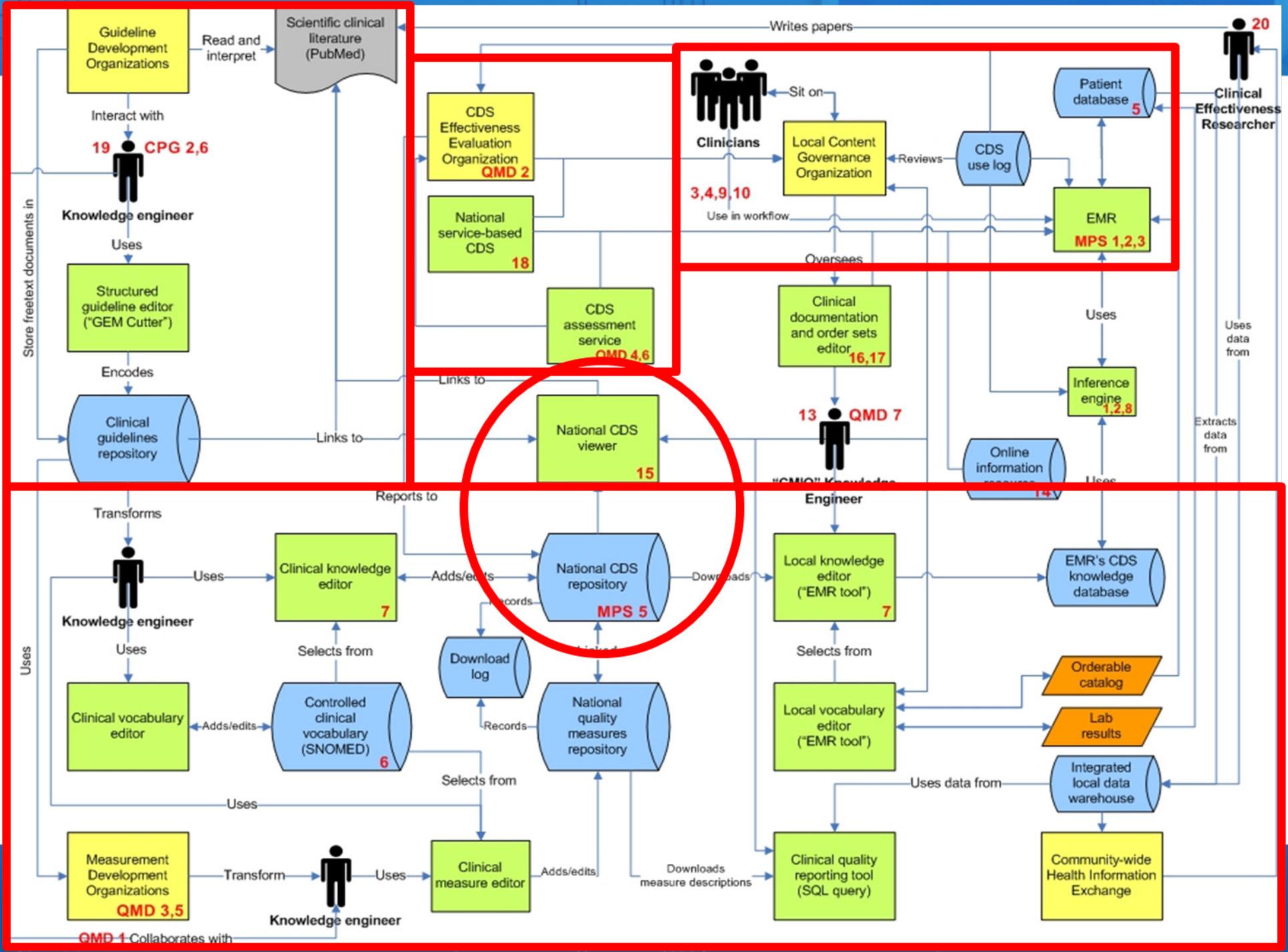
“development, implementation and evaluation of demonstration projects that advance understanding of how best to incorporate CDS into the delivery of healthcare...with the overall goal to explore how the translation of clinical knowledge into CDS can be routinized in practice and taken to scale in order to improve the quality of healthcare delivery in the U.S.”

Conducted 9 site visits using Rapid Assessment Process

- Sites completed extensive CDS / KM survey
- Remote demo of the system
- Interviewed key stakeholders
 - Administrators, clinician leaders, IT professionals
- Observed clinicians as they worked
- Analyzed transcripts & field notes

CDS Consortium: Institutions Visited

- Partners HealthCare, Boston, MA
- Regenstrief Institute, Indianapolis, IN
- Veterans Health Administration, Indianapolis, IN
- Kaiser Permanente, Portland, OR
- NextGen – Mid-Valley IPA, Salem, OR
- GE Healthcare – UMDNJ, New Brunswick, NJ
- Zynx, First Data Bank, UpToDate



Decision Support Capabilities of Commercial EHRs

| | Trigger | Input Data Element | Intervention | Offered Choice | Total Missing |
|----------|---------|--------------------|--------------|----------------|---------------|
| System 1 | 0 | 0 | 0 | 3 | 3 |
| System 2 | 1 | 1 | 2 | 5 | 9 |
| System 3 | 2 | 5 | 3 | 8 | 18 |
| System 4 | 0 | 0 | 0 | 3 | 3 |
| System 5 | 0 | 1 | 0 | 0 | 1 |
| System 6 | 0 | 0 | 0 | 4 | 4 |
| System 7 | 0 | 0 | 0 | 4 | 4 |
| System 8 | 4 | 6 | 2 | 6 | 18 |
| System 9 | 0 | 0 | 0 | 6 | 6 |

Clinical knowledge management: Tools & techniques

- A multidisciplinary team responsible for creating and maintaining the clinical content
- An external repository of the organization's clinical content with a web-based viewer that allows anyone in the organization to review it
- An online, collaborative, interactive, internet-based tool to facilitate content development
- An enterprise-wide tool to maintain the controlled clinical terminology concepts

Recommendations for Clinical Guideline Development Organizations Regarding CDS

- Work on increasing clarity and internal consistency of all clinical logic included in guidelines
 - All clinical knowledge should be included in both a human- and if possible, machine-readable format
- Identify standard data triggers
 - Review access to existing input data
 - Specify relevant controlled vocabularies
- Suggest appropriate personnel and best insertion points in the clinical workflow for CDS interventions
- Guideline development groups should include well-trained and experienced clinical informaticians

Publications

- Wright A, et al. Order Sets in Computerized Physician Order Entry Systems: an Analysis of Seven Sites. AMIA Symp Proc 2010.
- Richardson, J et al. Multiple Perspectives on the Meaning of Clinical Decision Support. AMIA Symp Proc 2010.
- Ash JS, et al. Identifying Best Practices for Clinical Decision Support and Knowledge Management in the Field. MedInfo 2010, Cape Town, South Africa.
- Sittig DF, et al. The state of the art in clinical knowledge management: an inventory of tools and techniques. Int J Med Inform 2010;79(1):44-57.
- Wright A, et al. Clinical decision support capabilities of commercially-available clinical information systems. J Am Med Inform Assoc 2009; 16(5):637-44.
- Sittig DF, et al. A set of preliminary standards recommended for achieving a national repository of clinical decision support interventions. AMIA Symp Proc 2009:614-8.
- Wright A, et al. Creating and sharing clinical decision support content with Web 2.0: Issues and examples. J Biomed Inform 2009;42(2):334-46.

Manuscripts under review

- Wright A, et al. Governance for Clinical Decision Support: Case Studies and Best Practices of Exemplary Institutions. JAMIA
- Ash JS, et al. Clinical Decision Support and Knowledge Management in Community Settings: A Qualitative Study. JAMIA
- McMullen et al. Rapid Assessment of Clinical Information Systems in the Healthcare Setting: A Timely Method for Time-Pressed Evaluation. Methods of Information in Medicine
- Ash JS, et al. Clinical Decision Support in Small Community Practice Settings: A Case Study. JAMIA
- Sittig DF, et al. Comparison of Clinical Knowledge Management Capabilities of Commercially-available and Leading Internally-developed Electronic Health Records. IJMI

Examples of Clinical knowledge management: Tools & techniques

- An external repository of the organization's clinical content with a web-based viewer that allows anyone in the organization to review it
 - Examples from Partners and Kaiser Permanente
- An online, collaborative, interactive, internet-based tool to facilitate content development
 - Example from Partners
- An enterprise-wide tool to maintain the controlled clinical terminology concepts
 - Example from Kaiser Permanente

An external repository of clinical content with web-based viewer



Knowledge Management Portal

Keyword Search:

Home Browse by Topic **Filter-based Search**

Search Criteria

Clinical Disciplines

- All Clinical Disciplines ▲
- Anesthesiology/Perioperative Medicine
- Behavioral Medicine
- Burn Management
- Cardiology (Interventional)
- Cardiology (Medical)
- Cardiology (Surgical)
- Emergency Medicine
- Endocrinology
- Gastroenterology
- General Medicine - Primary Care
- General Surgery
- GI Colorectal Surgery
- Hematology and Oncology
- Infectious Disease
- Nephrology
- Neurology
- Neurosurgery
- Newborn/Neonatology
- Obstetrics and Gynecology
- Ophthalmology ▼

Filters

CTRL - click to select multiple choices from the filters

Entity :

- All Entities ▲
- All Entities - PCI ▼
- BWH ▼

Content Type :

- All Content Types ▲
- Drug Information ▼
- Expert Dosing ▼

Venue :

- Acute Care ▲
- All Venues ▼
- Ambulatory Care ▼

Patient Safety :

- Alerts and Notification ▲
- All Patient Safety ▼
- Consequent Order/Lab Display ▼

Patient Age Group :

- Adult ▲
- All Patient Age Groups ▼
- Geriatric ▼

Disease Management :

- ADHD ▲
- All Disease Management ▼
- Asthma ▼

Application :

- All Applications ▲
- BICS Event Monitor ▼
- BICS Order Entry ▼

An external repository of clinical content with web-based viewer



KP HealthConnect Web Site

Clinical Library Home

Community Library

Home /
Search

About
Harvesting

Showroom

Browse

Table of
Contents

Additional
Content

Help

Contact

Browse Content

Content extracted on: 08-14-08.

All content currently in production is available to browse. Content is organized by type of content and then broken down by region. NOTE: Each contributor's content list includes only those tools that were created from scratch or "saved as" from another environment (e.g. PRODNAM). The lists do not include content that was used directly "as-is" from another environment.

Click on a Content Type link to jump to a Content Type section.

- [Alternative - Medication](#)
- [Alternative - Procedure](#)
- [Best Practice Alerts / Locators](#)
- [Documentation Flowsheet Groups / Rows](#)
- [Documentation Flowsheet Template](#)
- [Flowsheet](#)
- [Health Maintenance Module](#)
- [Order Set \(LGQ\)](#)
- [Panel - Combined](#)
- [Panel - Medications](#)
- [Panel - Procedures](#)
- [Questionnaire](#)
- [SmartForms](#)
- [SmartLink](#)
- [SmartSet \(LGQ\)](#)
- [SmartSet - Best Practice Alert \(LGQ\)](#)
- [SmartSet/OrderSet \(PRL\)](#)
- [SmartText](#)
- [Text Template](#)

An internet-based tool to facilitate content development

agree as it is (██████████, 19 Sep 07 12:59pm) 

In general agree... (██████████, 22 Sep 07 5:50pm) 

but as with the moderate risk, am a little concerned about the "Done Elsewhere" response snoozing the reminder for a full 5 years given the possibility of getting a patient's report that things were normal (and they misunderstood the path report, endoscopists letter, or never even got it).

Question (██████████, 1 Oct 07 9:55pm) 

How does everyone feel about this?

1. Should we turn the reminder off for a shorter period of time if "Done elsewhere" is chosen?
2. Should we add (or change) a coded response "Done elsewhere and no adenomas/cancer"?

#2 (██████████, 2 Oct 07 11:29am) 

Agree with ██████████, I like option # 2.

Regarding the 10-year interval:

- a.) I think it helps me "sell" the exam and thus boosts compliance
- b.) Perhaps we could automate a reminder to start doing stool cards at the 5-year mark (if experts think this strategy is actually helpful).

Option #2 looks good. (██████████, 15 Oct 07 4:25pm) 

It is more specific, adding an extra inducement for us to get the facts straight with patients.

██████████, regarding the 10-year interval, this is for patients at moderate-to-high risk and so the recommendation is q 5 years.

An enterprise-wide tool to maintain the controlled clinical terminology concepts

QCMCriteria - Microsoft Internet Explorer

Address: http://cmt-dev4.dwny.ca.kp.org/Portal/QueryModel/QueryModel_v1.0/Web/QCMCriteria.aspx

Query Model

Save CQML | VCG/HCM Metadata | Run | Clear

Criteria Link | Export | Help

Query Details

Query Name: EDG_ClinicalFinding_Template

Query Desc: Queries: [1] IsA FocusConcept; [2] IsA Clinical finding (404684003); AssociatedWith FocusConcept; [3] IsA

INI: EDG Clinical (Diagnosis)

Load CQML: Browse... | Re-Load

Property Based Query

| | Value | 300000 | 300010 |
|------------|-------|--------|--------|
| Icd-9 Code | 250 | | |
| Icd-9 Code | | | |
| Icd-9 Code | | | |
| Icd-9 Code | | | |

Add more rows +

Hierarchical Based Query

SCTID: 73211009

SCTID:

SCTID:

Add more rows +

Subsumption Based Query

Add concept with +

Is A: 404684003 +

Role: Associated with (attribute) 73211009 +

-- Select Role Type --

-- Select Role Type --

1 2 3 4 5 6 7 8 9 10 ... Total Results = 420

| Exclude | CSM ID | item 2 | item 1 | item 11 | item 40 | ite |
|--------------------------|------------------------|---|--------|----------|---------|-----|
| <input type="checkbox"/> | 102325 | DIABETIC RETINOPATHY, BACKGROUND. | 23255 | 12123255 | 362.01J | 36 |
| <input type="checkbox"/> | 102402 | BLINDNESS DUE TO DM | 23331 | 12123331 | 500663 | 50 |
| <input type="checkbox"/> | 103008 | DM 1, UNCONTROLLED, W MANIFESTATION.. | 23935 | 12123935 | 250.83A | 25 |
| <input type="checkbox"/> | 103009 | DM 2, UNCONTROLLED, W MANIFESTATION | 23936 | 12123936 | 250.92B | 25 |
| <input type="checkbox"/> | 103010 | DM 2 W INTRACAPILLARY GLOMERULOSCLEROSIS | 23937 | 12123937 | 500742 | 50 |
| <input type="checkbox"/> | 103011 | DM 1 W DIABETIC PERIPHERAL VASCULAR DISEASE | 23938 | 12123938 | 500717 | 50 |
| <input type="checkbox"/> | 103012 | DM 1 W PERIPHERAL NEUROPATHY | 23939 | 12123939 | 500572 | 50 |
| <input type="checkbox"/> | 103013 | DM 2 W DIABETIC PERIPHERAL AUTONOMIC NEUROPATHY | 23940 | 12123940 | 500568 | 50 |
| <input type="checkbox"/> | 103014 | DM 2, UNCONTROLLED, W COMA | 23941 | 12123941 | 250.32B | 25 |

Internet

Knowledge Translation and Specification Team

Dr. Aziz Boxwala, PhD
University of San Diego, California

Goal of Knowledge Representation

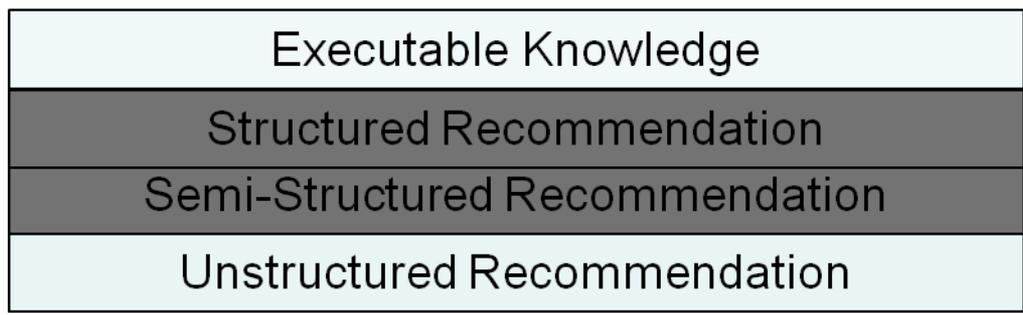
Enable *efficient* and *rapid* implementation of best practice recommendations in heterogeneous Clinical Decision Support (CDS) modalities and systems, and in varying organizational contexts.

Knowledge Representation Approach

- Multilayered knowledge representation framework
 - Increasing structure and refinement in successive layers
- Emphasis on modeling the decision
 - i.e., not a temporally-oriented plan or workflow
- Use of standards where available

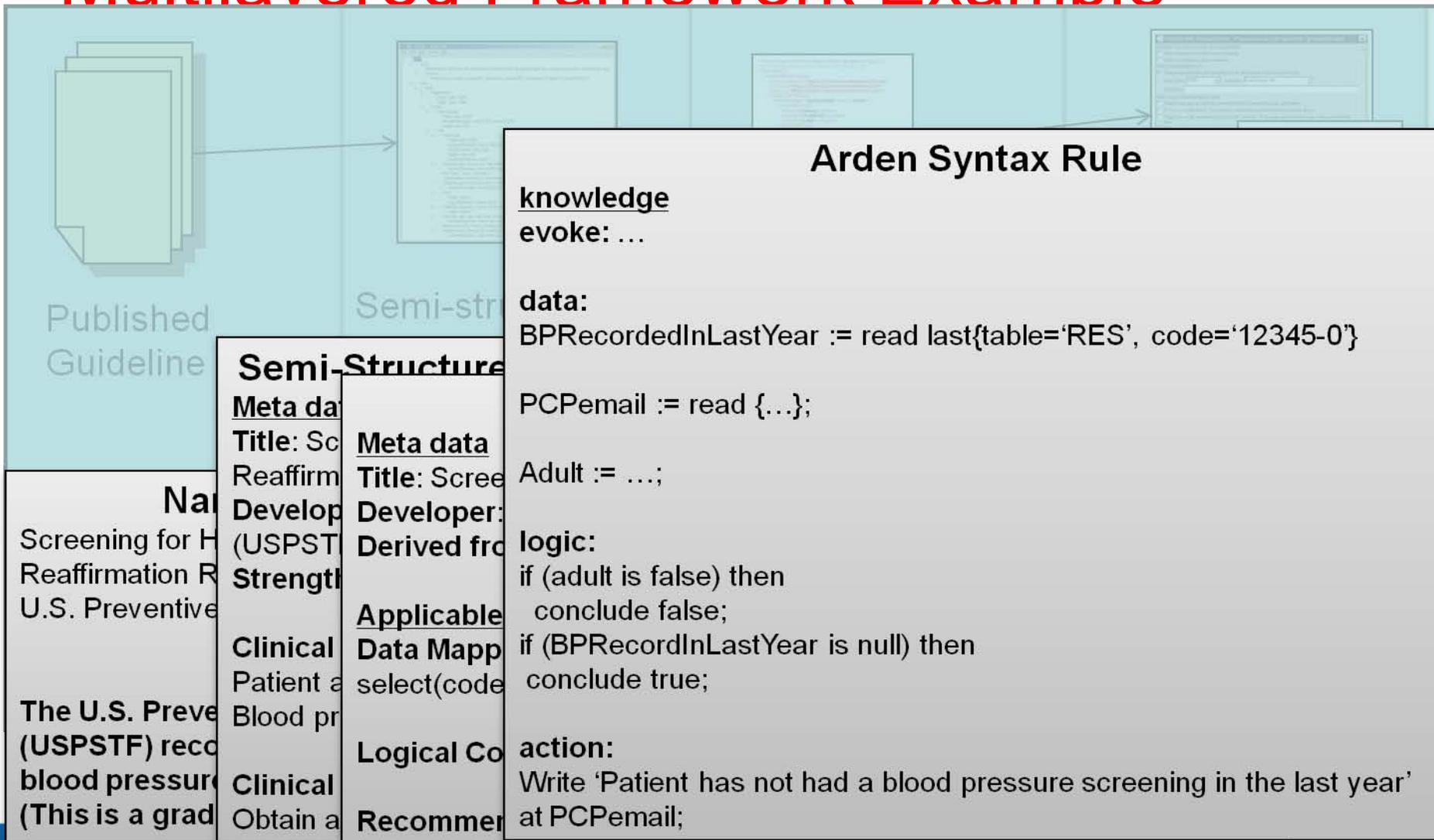
Multilayered Framework

Precision and executability



Flexibility and adaptability

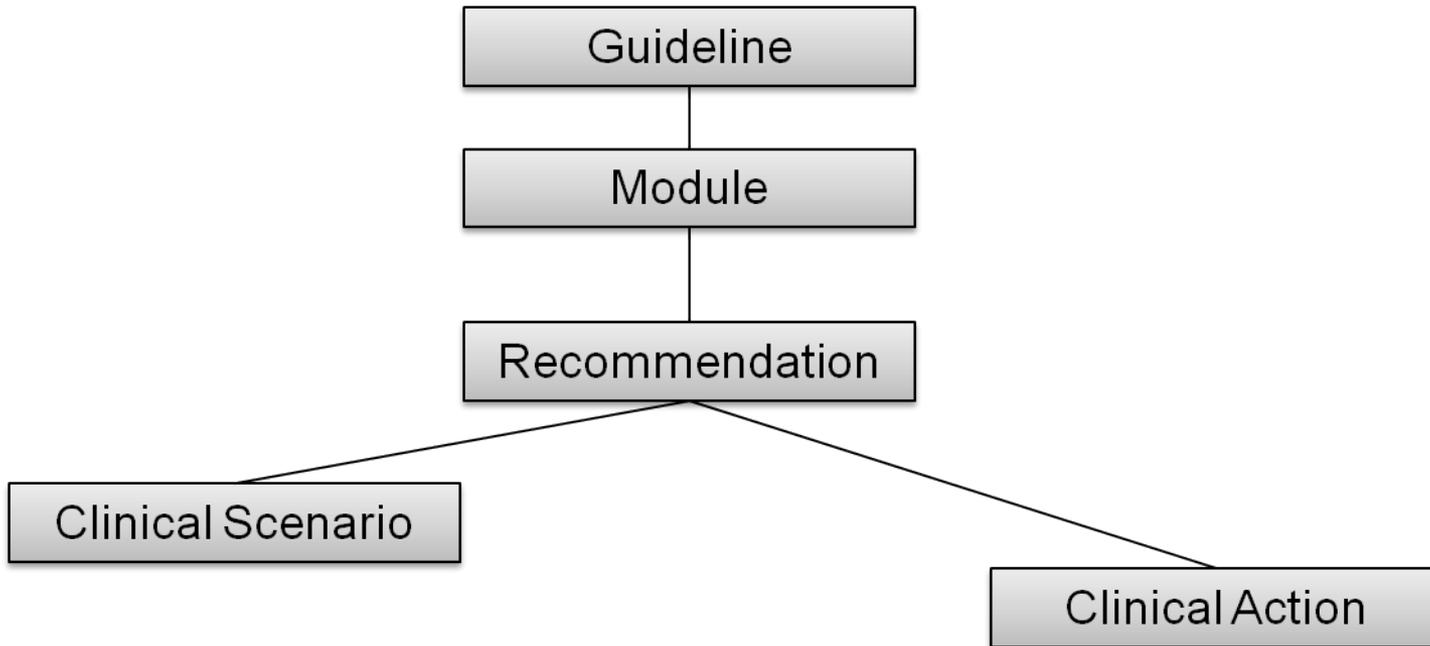
Multilayered Framework Example



Why Multilayered Representation?

- Allows us to balance between the competing requirements for flexibility in representation for various environments and the ability to deliver precise, executable knowledge that can be rapidly implemented
 - For those who can use an available Machine Executable level knowledge artifact, this approach provides for rapid implementation of the guideline
 - For others, it might be more appropriate to use an artifact from the Semi-Structured Recommendation or Abstract layers, to create rapidly their own executable knowledge. They can then submit the latter to the KM portal for inclusion as a Machine Executable artifact
- Provides a path to achieve logical consistency from the narrative guideline to the execution layer

Knowledge Model (Conceptual)



Metadata

Identity and Provenance

- Identifiers
- Lifecycle
- Contributors
- Related artifacts

Coverage

- Clinical focus
- Patient
- User
- Care setting

Development Approach

- Evidence
- Testing

Metadata elements are largely derived from Guideline Elements Model (GEM)

Information and Action Model

- Patient information model represents patient data
- Action model represents the recommended action
- Models derived from the “entry” segment of the HL7 CCD document
 - Specifies data structures and terminologies

Example Level 2: Semi-Structured Recommendation

Recommendation 3.1: HighA1c.StartOralAgentOrInsulin

Description: Start oral agent or insulin on poorly controlled diabetic patients not receiving insulin

Scenario: *Poorly controlled diabetic not receiving insulin*

Refers to the following definition: Poorly controlled diabetes = Most recent HgbA1c in the last year > 7%

Recommended Action(s):

Choice: Start insulin or new oral hypoglycemic medication

| | |
|----|--|
| or | Start new oral hypoglycemic medication |
|----|--|

| | |
|----|---|
| or | Start insulin and educate patient about insulin |
|----|---|

Example Level 3: Structured Recommendation

Recommendation 3.1: *Start oral hypoglycemic agent or insulin (Untreated poorly controlled non-Type 1 diabetes)*

Description: Start an oral hypoglycemic agent or insulin in a patient with poorly controlled non-Type 1 diabetes if not already on insulin or an oral hypoglycemic agent.

Recommendation Scenario: Untreated poorly controlled non-Type 1 diabetes

Description: Poorly controlled diabetes, not Type 1, not currently on insulin or an oral hypoglycemic agent.

* Poorly controlled diabetes

Description: Most recent HgbA1c in the last year > 7%

Expression: mostRecentHgbA1c12m.value >7

Data mapping for: Most recent HgbA1c Last 12 Months

Lab Type: HgbA1c (LOINC Code: 17856-6)

Status: completed (Act Status: completed)

Lab Type: HgbA1c (LOINC Code: 4548-4)

Status: completed (Act Status: completed)

Lab Type: HgbA1c (LOINC Code: 4549-2)

Status: completed (Act Status: completed)

Expression: Let month : CodedValue = Factory.CodedValue("2.16.840.1.113883.6.96", "258706009") in
 patient.laboratoryResult->select(resultType.codeSystem = "2.16.840.1.113883.6.1" and (resultType.code= "4548-4" or
 resultType.code= "17856-6" or resultType.code= "4549-2") and resultStatus.codeSystem = "Local" and
 resultStatus.code = "Completed" and resultDateTime.high.occurredWithin(12, month))->sortBy("resultDateTime.value")-
 >last()

Data Type: LaboratoryResult

Editing Tool

- Browser-based editing tool
 - Just completed beta version
 - Produces XML file with structured or semi-structured recommendations
- Replaces editing tool that used a commercial and proprietary platform
- Utilizes xslt Stylesheets

Editing Tool (continued)

Guideline Entry Form- Structured Model v 0.2 of

Diabetes guideline for AHRQ CDSC pilot (Level 2)

Rules for managing outpatient adult diabetic patients

expand/collapse codes classification table New Save As...

Navigation

- Structured Guideline
 - Metadata
 - Scenario: **EVOKES**
 - Module
 - Rec 1: OverdueA1c
 - Rec 2: HighA1cMonitoring
 - Module
 - Rec 1: Overdue Eye Exam
 - Rec 2: Overdue Foot Exam
 - Rec 3: Overdue microalbuminuria
 - Module
 - Rec 1: HighA1c.StartOralAgentOrInsulin
 - Rec 2: HighA1c.StartMetformin
 - Rec 3: OralAgent
 - Rec 4: Insulin
 - Rec 5: Nephropathy.NotOnARBorACEI

Guideline

- **Metadata**
 - Identity title: **Diabetes guideline for AHRQ CDSC pilot**
Rules for managing outpatient adult diabetic patients
 - Developer:** PHS
 - Coverage (includes 3)
 - adult** (coverage type: **patient**)
 - diabetes mellitus** (coverage type: **clinicalFocus**)
 - outpatient** (coverage type: **careSetting**)
- **Applies to: EVOKES**
 - description:*
 - Definition of adult patient: patient 18 years or older
- **Module ASSESS**
 - description:* **Rules for monitoring HgbA1c**
 - **Recommendation 1: (OverdueA1c)**
 - HgbA1c should be monitored biannually
 - + **Applies to: OverdueA1c**
 - description:* **Order HgbA1c now**
 - + **Recommendation 2: (HighA1cMonitoring)**
- + **Module SCREEN**

Inspect Clear

Console HTML CSS Script DOM XHR

Editing Tool (continued)

StructuredGuideline

+ Metadata

+ Applies to: Adult with non-gestational DM clinical state

- Module ASSESS

description: Rules that recommend periodic assessment of glycosylated hemoglobin A1c in patients with diabetes mellitus.

- Recommendation 1: (Order HgbA1c Now (Overdue HgbA1c))

description: Glycosylated hemoglobin A1c should be monitored biannually

+ Metadata

- If: OverdueHgbA1c

description: No glycosylated hemoglobin A1c result within last 6 months

- Data mapping: HgbA1c results in last 6 months

description: The set of all glycosylated hemoglobin A1c results within the last 6 months

Data info: HgbA1cResults6m (type: Set(LaboratoryResult))

- Then: Order HgbA1c now!

- At least one of the following (OR) : (3)

+ Physician message: Patient is overdue for HgbA1c measurement (recommended every 6 months)

+ ProcedureRequest: Recommend ordering HgA1c now.

+ Patient message: Hemoglobin A1c (Hgb A1c) is a blood test that measures your average blood sugar levels over the previous three months. Most people with diabetes have an Hgb A1c test every 6 months. If it's been more than 6 months since your last test, you may want to discuss Hgb A1c testing with your doctor.

+ Recommendation 2: (Order HgbA1c (Almost overdue HgbA1c))

More Information

```
expression: Let month : CodedValue = Factory.CodedValue("2.16.840.1.113883.6.8", "mo") in patient.laboratoryResult-
>select(resultType.codeSystem = "2.16.840.1.113883.6.1" and (resultType.code= "17856-6" or resultType.code="4548-4" or
resultType.code="4549-2") and resultStatus.codeSystem = "2.16.840.1.113883.5.14" and resultStatus.code = "completed"
and resultDateTime.high.occurredWithin(6, month))
```

2010-2011 OY1 Plans

- Modality-specific models
- Refinements to metadata model
- Better integration of semi-structured and structured models
- Updates to authoring tool

Next Steps (1 of 3)

Research Management Team

- Complete Dissemination Plan
- Receive PHS IRB approval
- Continue facilitation of work on CDSC study and publications

Knowledge Management Lifecycle Assessment (KMLA)

- Continue data analysis and working on publications
- Start planning site visit to PHS

Knowledge Translation and Specification Team (KTS)

- Develop mappings between GEM and CDSC schemas
- Define plans for the next version of the guideline editing/authoring tool
- Start refinement of Level 2 and 3 models as described in the OY1 proposal
- Continue project work with GLIDES and finalize areas of collaboration

Next Steps (2 of 3)

Knowledge Management Portal Team (KM Portal)

- Continue with KM portal maintenance and support as required
- Continue with observation of KM portal usage for analysis and evaluation

Recommendations Team

- Continue analyzing data from clinical content vendors on which the team will base future recommendations
- Continue work on new paper that provides a consolidated, model-based overview of the recommendations needed to create a national repository for CDS integration and syndication

CDS Services Team

- Complete necessary infrastructure updates at both PHS and Regenstrief in order for Regenstrief to begin to consume ECRS for test patients
- Continue to enhance support model and get sign-off from key stakeholders at PHS such as service teams, LMR team, and clinicians using the ECRS
- Begin to load performance data from logs to the SQL database and start analysis of performance data for ECRS, CCD Factory, and associated services

Next Steps (3 of 3)

Demonstrations Team

- Continue coordinating work on CDSC service implementation at RI
- Continue data collection for PHS LMR demonstration

Dashboards Team

- Review initial feedback on CDS Dashboards
- Turn on Developer's Dashboard for identified subset of individuals.
- Begin work on components of the Dashboard Development Guide (DDG), Site Readiness Assessment and Report Specification

Content Governance Committee (CGC)

- Continue work on legal documentation and obtaining sign-off from CGC members
- Facilitate efforts to create a framework for rule prioritization that can be shared with each CDSC member institution

Knowledge Management Team

- Continue working with Regenstrief on the content integration work and identify any necessary subset and rule changes
- Continue work on the Service and Data Sharing agreement

Team Challenges

Recommendations Team

- HITSP is now out of business. This ultimately affected the manner in which the Recommendations team disseminates its recommendations

Knowledge Management

- Limited clinical resources, which are critical for the Regenstrief integration work
- The lack of comprehensive crosswalks for procedure codes (SNOMED to / from CPT) remains a challenge

CDS Services

- Completion of infrastructure and security requirements at both PHS and RI
- Legal issues. The process and procedure for service integration has to be documented before the Service Sharing Agreement can be drafted by the PHS legal team

Content Governance Committee

- It continues to be a challenge to identify the right individuals from each institution to review legal documents, gather their comments, coordinate meetings to resolve their requests, and then identify and follow-through with signatures

Questions to TEP (1 of 2)



- What do guideline authors think about legal liability and intellectual property issues? What can we learn from them for CDSC legal agreements?
- What about the possibility of asking guideline developers to represent guidelines in Python or another computer language? SEC just tried this with waterfall provisions in EDGAR filings:
<http://www.sec.gov/rules/proposed/2010/33-9117.pdf>
- Is there a preferred open source rules engine?
- Would it be useful to ask guideline developers to make L2 or L3 knowledge specs to go along with their L1 guidelines? How might we incentivize them to do so?”
- Do we need a national portal for CDS content? Who should create it?
- Which of our knowledge levels is best for public sharing of knowledge?
- What are preferred collaborative KM tools?
- Should one develop openEMR CKM toolset?

Questions to TEP (2 of 2)



- How should guidelines, performance measures and CDS intersect?
- How can we get guideline developers, CDS developers and EHR developers to cooperate?
- What's the business model for transforming guidelines into CDS?