

Clinical Decision Support Consortium

Technical Expert Panel Teleconference

May 20, 2008

CDS

consortium

AHRQ

PARTNERS
HEALTHCARE



KAISER PERMANENTE

SIEMENS



MASSPRO
Making an Impact

Agenda

- Background
- Key research questions
- Teams' composition
- Review of projects
- Timelines
- Discussion

CDS Consortium Members

- Partners Healthcare
- Regenstrief Institute
- Veteran's Health Administration
- Kaiser/NWRC
- Siemens/NextGen
- GE
- Masspro

Background

- Clinical decision support has been applied to
 - increase quality and patient safety
 - improve adherence to guidelines for prevention and treatment
 - avoid medication errors
- Systematic reviews have shown that CDS can be useful across a variety of clinical purposes and topics
- Current adoption of advanced clinical decision support is limited due to a variety of reasons, including:
 - Limited implementation of EMR, CPOE, PHR, etc.
 - Difficulty developing clinical practice guidelines
 - A lack of standards
 - Absence of a central repository or knowledge resource
 - Poor support for CDS in commercial EHRs
 - Challenges in integrating CDS into the clinical workflow
 - A limited understanding of organizational, and cultural issues relating to clinical decision support

Significance

The CDS Consortium will carry out a program of research and development activities to improve our knowledge about clinical decision support, with the ultimate goal of supporting and enabling widespread sharing and adoption of clinical decision support in diverse record systems.

Key Research Questions

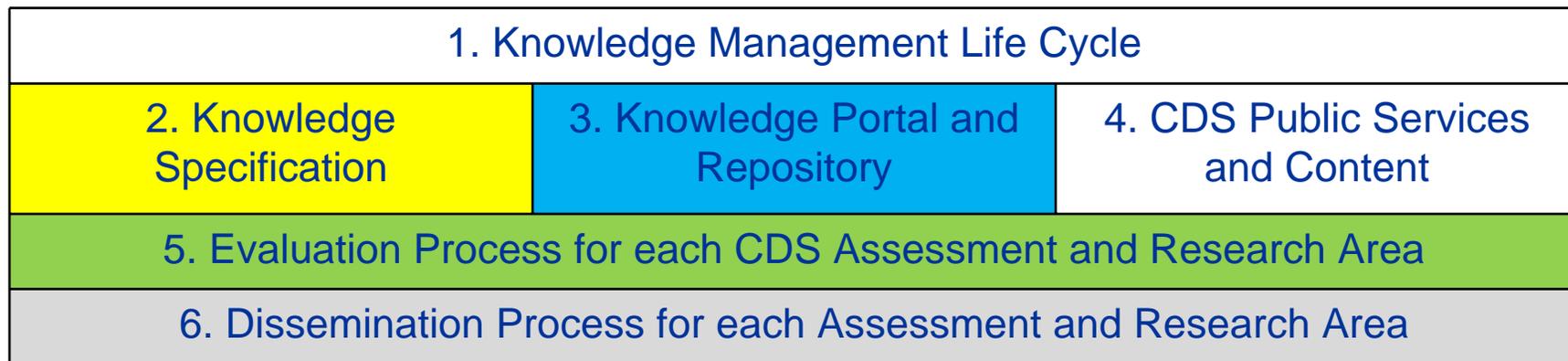
- How do we **improve** the translation of knowledge in clinical practice guidelines into actionable CDS in healthcare information technology?
- How do we optimally **represent** knowledge and data required to make actionable CDS content in both human and machine readable form?
- How do we **collate, aggregate, and curate** knowledge content for CDS in a knowledge portal used by members of the CDS Consortium? How may we use such a tool to support knowledge management and collaborative knowledge engineering for clinical decision support at scale, across multiple healthcare delivery organizations, and multiple domains of medicine?
- How do we **demonstrate** broad adoption of evidence-based CDS at scale in a wide array of HIT products used in disparate ambulatory care delivery settings?
- Further, how do we **deploy** clinical decision support services in healthcare information technology in a manner that improves CDS impact?
- How do we take the learnings garnered through the course of these investigations and broadly **disseminate** them broadly to key stakeholders?

CDS Consortium Goal

To **assess, define, demonstrate, and evaluate** best practices for knowledge management and clinical decision support in healthcare information technology at scale – across multiple ambulatory care settings and EHR technology platforms.

Six specific research objectives

- Knowledge management lifecycle
- Knowledge specification
- Knowledge Portal and Repository
- CDS Knowledge Content and Public Web Services
- Evaluation
- Dissemination



Guidelines To Implement

- Diabetes Mellitus
 - 2007 Diabetes Management Standards of Care from the Clinical Practice Recommendations of the American Diabetes Association.
- Coronary Artery Disease
 - American College of Cardiology's guideline on Antiplatelet Therapy Prescribed for Patients with Coronary Artery Disease
 - U.S. Preventive Services Task Force recommendation on Aspirin for the Primary Prevention of Cardiovascular Events
- Hypertension
 - U.S. Preventive Services Task Force recommendations on Screening for High Blood Pressure

Project Teams

Team Name	Team Lead	Team Members
KM Lifecycle Assessment	Dean Sittig	Ash, Blumenfeld, Brandt, Wright, <u>Site Research Analysts</u> : Regenstrief, VHA, Kaiser NW, GE, Siemens
Knowledge Translation and Specification Research	Aziz Boxwala	Hongsermeier, Haslbeck, Kashyap, Schnipper, Wright, Maviglia, Simonaitis, Sittig, Blumenfeld, Brandt, Tsai, Allen, Pang, Lou
KM Portal and Repository	Tonya Hongsermeier	Boxwala, Lou, Maviglia, Overhage, Brandt, Bates, Blumenfeld, Palchuk, Parker
Vendor Generalization and CCHIT	Dean Sittig	Ash, Middleton, Overhage, Brandt, Bates, Blumenfeld, Parker, Palchuk
CDS Services Development	Howard Goldberg	Wright, Paterno, Kashyap, Maviglia, Boxwala, Palchuk, Schnipper, Van Putten

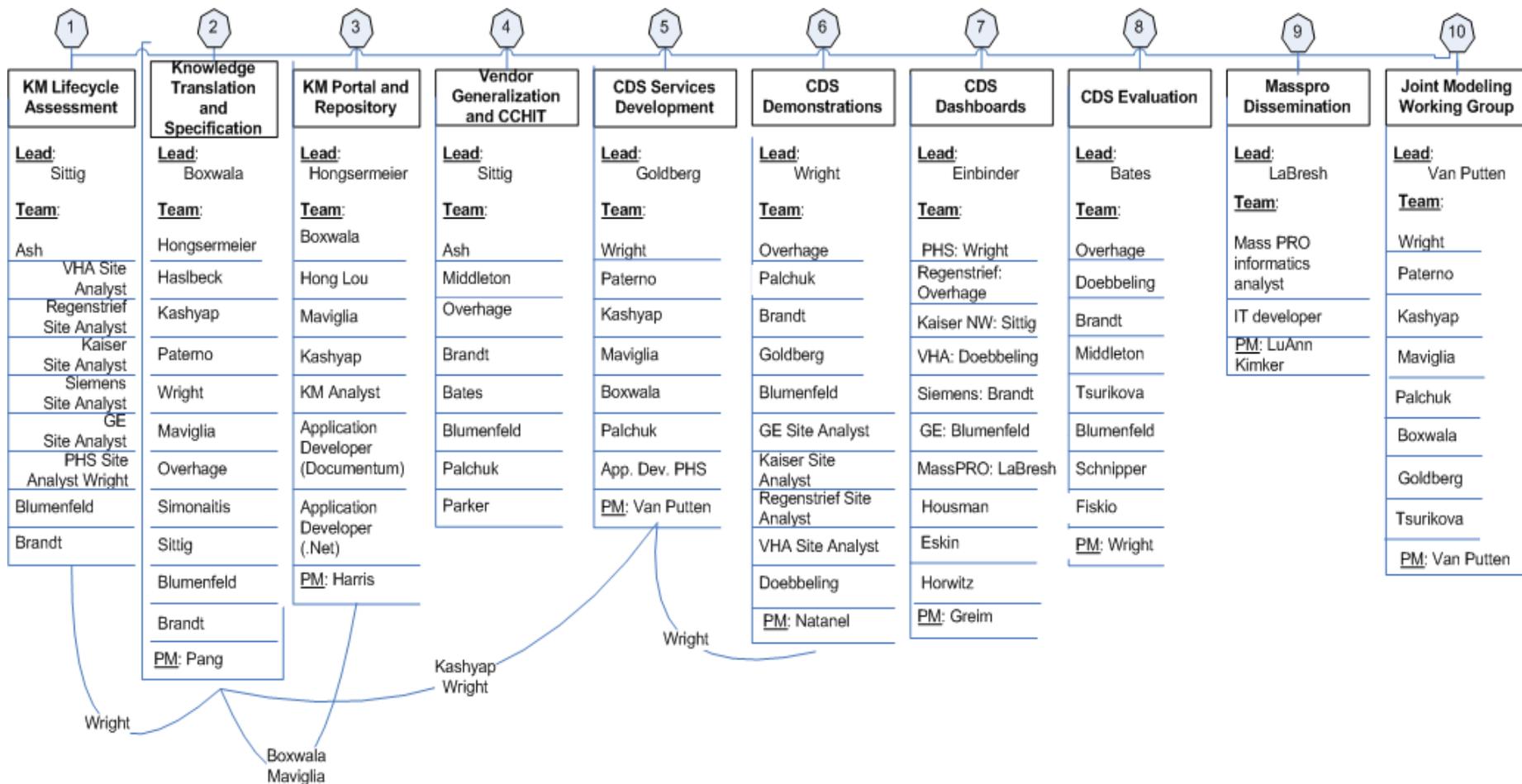
Project Teams, Cont.

Team Name	Team Lead	Team Members
CDS Demonstrations	<u>Site leads:</u> Palchuk, Overhage, Doebbeling, Brandt, Blumenfeld	Site Analysts
CDS Dashboards	Jonathan Einbinder	Site Leads, and analysts
CDS Evaluation	David Bates	Site Leads, and analysts
Masspro Dissemination	Ken LaBresh	Parker, Kimker
Joint Information Modeling Working Team	Cheryl Van Putten	Boxwala, Goldberg, Kashyap, Maviglia, Palchuk, Paterno, Wright, Tsurikova

Consortium Personnel Structure



Team chart



Knowledge Management Projects

- Focus Conditions: USPSTF Guidelines, Diabetes, CAD
- Each Project has a dedicated team
- **Project:** Survey KM Lifecycle Practices
 - From CPG to CDS: Survey KM lifecycle practice, policy, procedure, barriers/enablers, impact assessment, feedback methods
- **Project:** Definition of Best Practices for Knowledge Translation and Specification for CDS
 - Define multi-layered knowledge representation
- **Project:** KM Portal and Repository Construction
 - Implement Knowledge representation standards, implement methods for collaborative knowledge engineering
- **Project:** Vendor Generalization and CCHIT and HITSP recommendations

CDS Knowledge Content and Public Web Services Projects

- **Project:** Incorporating knowledge-based web services for CDS
 - Build CDS Web Services for focus conditions
- **Project:** Demonstration: KM Portal and Repository for CDS Knowledge Content and Collaboration
 - Demonstrate Collaborative KE methods to arrive at consensus opinion of CDS for USPSTF guidelines, DM, and CAD
 - Store consensus defined knowledge artifacts for USPSTF guidelines, DM, and CAD in KM Repository

CDS Dashboards

Project: CDS Dashboard

- Dashboard will be developed to inform the end user as to his or her use of decision support and compliance with CDS recommendations, and provide feedback to the research team about CDS performance characteristics
 - Summary of the user's performance for key indicators or metrics;
 - Comparison of the user's performance with other users or reference benchmarks;
 - Feedback data on usage and compliance rates, issues concerns with CDS
- Evaluation
 - Analysis of dashboard usage data
 - Survey to dashboard users (CDS Consortium personnel and clinic directors)
 - Usage data

Demonstrations: Phase 1

Project: **Phase 1 CDS for Preventive Care Services Demonstration at one site**

- Partners LMR:
 - Implementation of improved USPSTF Guidelines in LMR
 - Implementation of CDS Dashboard for Preventive Care Team CDS Services Development
- Team CDS Services Development

Project: **Phase 1 CDS for Chronic Care Demonstration at one Site**

- Partners LMR:
 - DM and CAD guidelines in KM Portal and Repository
 - Implementation of improved CAD/DM Guidelines in LMR Smart Forms II in one site
 - Implementation of CDS Dashboard for CAD/DM Chronic Care
- Team CDS Services Development

Evaluation of both projects above

Team: Partners Evaluation Team

Evaluation: 3 Core Areas

- Core Practices and Technologies for CDS
 - KM Lifecycle
 - Knowledge Specification
 - Knowledge Repository and Portal
 - CDS Web Services
 - Demonstration Projects: Partners, VHA, Regenstrief, GE, Siemens/NextGen
- Vendor and CCHIT Recommendations
- HITSP Recommendations
- CDS Deployment Recommendations
 - Technology issues
 - Organizational barriers and enablers

Dissemination

Project: **Masspro Dissemination**

- Generalization of best practices for dissemination in DOQ-IT U portal
 - Knowledge Management Lifecycle
 - Knowledge Specification
 - CDS for USPSTF Guidelines
 - CDS for Chronic care of DM, CAD

Team: **Masspro Dissemination team**

- Academic reports

Deliverables and Work Products

- Tangible, actionable **artifacts** such as the shareable, human readable, and computable forms of clinical practice guidelines we develop, as well as software and demonstration systems, each of which we will make publicly available.
- Detailed **guidance and recommendations**, based on what we learn from our efforts, for external parties such as the Certification Commission for Health Information Technology (CCHIT) and the Health Information Technology Standards Panel (HITSP)
- A set of knowledge management **best practices**, such as methods for knowledge management, representation, implementation, and performance assessment, and managing decision-support related organizational change. We will share this knowledge through a variety of channels, such as presentations, academic papers and reports, and content posted through AHRQ's National Resource Center for Health Information Technology.
- **Governance Model**: we will elaborate a collaborative governance model for managing knowledge assets used in CDS across disparate systems and settings, and share our experiences.

Timeline Overview

Yr 1		Yr 2	
Knowledge Management Lifecycle			
	Knowledge Specification		
Knowledge Portal & Repository			
		CDS Web Services Development	
	Vendor Recommendation/CCHIT		
			Demo Phase 1: LMR
Evaluation			
Dissemination			

Discussion

