

Clinical Decision Support (CDS) Consortium

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Research Areas



Tool Development

Interoperability

At a Glance

- Status: **Completed Consortium**
- Year Launched: **2008**
- Initiating Organization: **Partners Healthcare**
- Initiator Type: **Health-care organization**
- Location: **North America**

Abstract

The Clinical Decision Support Consortium (CDSC) aims to enable the use of electronic health records (EHRs) to improve the safety and quality of medical care by pairing these data resources with clinical decision support (CDS) systems to effectively influence physician behavior. CDSC aims to advance a variety of techniques designed to facilitate and guide doctors' decision-making toward evidence-based practice.

Mission

The CDSC goal is to assess, define, demonstrate, and evaluate best practices for knowledge management and CDS in healthcare information technology at scale—across multiple ambulatory care settings and EHR technology platforms. Common examples of CDS include computerized checks for drug interactions and electronic reminders for screening tests such as mammograms and Pap smears.

Over the past four years, CDSC has accomplished the following:

- Conducted a broad and deep ethnographic study of CDS. This has led to a better

understanding of technical and sociological issues related to decision support, which has proved critical as CDSC develops CDS content and carries out demonstrations across a variety of CDSC member sites and has also yielded important recommendations to key decision support stakeholders and policymakers.

- Developed a practical four-layer knowledge representation stack and Knowledge Authoring Tool for translating clinical guidelines from human-readable into machine-executable form for a variety of CDS modalities.
- Developed and launched a publicly accessible, web-based Knowledge Management (KM) Portal for collating and browsing knowledge artifacts used in CDS.
- Constructed and tested novel web-based CDS services, integrated them into two EHRs (the Partners HealthCare System [PHS] Longitudinal Medical Record and the Regenstrief Institute CareWeb), and ran a six-month pilot. CDSC is now working with NextGen and GE to implement the services in their commercial EHRs.
- Devised a novel measurement model for CDS that accounts for the myriad of ways that CDS can influence practice, as well as the decision support process and ultimately clinical quality.
- Developed legal agreements to support CDSC knowledge sharing and use of CDS services.
- Built a robust clinical content governance process and tackled difficult issues relating to provenance, standardization, localization, and versioning.
- Disseminated its findings widely by presenting at more than a dozen national and international meetings and by publishing papers at conferences and in journals

CDSC's main deliverables include the following:

Tangible, actionable artifacts: These include shareable, human readable, and computable forms of PHS-developed clinical practice guidelines, software, and demonstration systems, which will be made available to the public.

Software tools and technologies: CDSC produces tools and software that are shared with all consortium members. Cloud-based CDS services are available for consumption in remote electronic medical record (EMR) systems, and implementation guides and technical specifications are available to assist with implementation. The Knowledge Authoring Tool allows users to create knowledge artifacts in the Level 3 knowledge representation formalism.

Detailed guidance and recommendations: These will be based on what CDSC learns from its efforts, for external parties such as the Certification Commission for Health Information Technology and the Health Information Technology Standards Panel.

Set of knowledge management best practices: This will include methods for knowledge management, representation, implementation, and performance assessment, and for management of decision support–related organizational change. CDSC will share this knowledge through a variety of channels, such as presentations, academic papers and reports, and content posted through the Association for Healthcare Research Quality’s National Resource Center for Health Information Technology.

Structure & Governance

CDSC is composed of more than 90 members who participate among 10 various consortium teams, which are coordinated by a project lead (Blackford Middleton, M.D., M.P.H., M.Sc., FACP, FACMI, FHIMSS). These teams include the following:

The Research Management Team (RMT) manages and oversees the nine project teams that are responsible for the completion of CDSC research projects, tasks, and evaluation efforts. The RMT facilitates the execution of the CDSC program by employing project-management best practices to control and monitor daily research activities.

The Knowledge Management Lifecycle Assessment Team conducts surveys and site visits at the CDSC member institutions to assess CDS activities and practices both before and after CDS site implementations.

The Knowledge Translation and Specification (KTS) Team is charged with selecting guidelines to use in consortium activities and translating these guidelines into the multilayered knowledge representation format for use in the service and demonstration projects.

The Knowledge Management Portal Team develops and implements collaborative knowledge management tools for use in the development, review, publication, cataloging, and archival of knowledge specifications in human- and machine-readable forms.

The Recommendations Team assesses state-of-the-art methods for CDS system support and evaluates results from CDSC best practices development. The team also defines a series of recommendations for vendors, content vendors, and regulatory and certification authorities on CDS best practices.

The CDS Services Team develops publicly available web services, from the CDS knowledge representations prepared by the KTS team, for use in information systems among CDSC member institutions.

The CDS Demonstration Team works in conjunction with site-specific demonstration teams to perform analysis on the development and implementation of CDSC services.

The CDS Dashboards Team develops performance reporting tools and CDS dashboards to promote adherence to consortium guidelines among providers and clinical quality staff.

The CDS Evaluation Team coordinates and conducts evaluations of all CDSC projects.

The Content Governance Committee is a group of subject-matter experts who make policy decisions regarding CDS content development, use, and sharing.

Data Sharing

To aid in dissemination, CDSC lists its publications here:

<http://www.cdsconsortium.org/dissemination.asp>

Links/Social Media Feed

Homepage

<http://www.cdsconsortium.org/>

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