Improving Outcomes with Clinical Decision Support

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Session Summary

The seminal Institution of Medicine, To Err is Human: Building a Safer Health System, endorsed Clinical Decision Support (CDS) as one of the most powerful tools available in the national imperative toward improving patient safety and health care quality. CDS is a process for enhancing health care related decisions and actions with pertinent, organized clinical knowledge and patient information to improve health and health care. In this session, CDS interventions will be explored across the care continuum, providing different kinds of information to different care delivery participants in a variety of formats through different channels into various points in workflow.

Session Objectives

Upon completion of this presentation, the participant will be able to:

- define Clinical Decision Support;
- describe the Five Right of CDS
  - right information
  - right people
  - right intervention
  - right channel
  - right points in workflow
- identify 3 of the 6 categories in the Taxonomy of CDS and provide an example of each .

References


Improving Outcomes with Clinical Decision Support

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Objectives

- Define Clinical Decision Support
- Describe the Five Right of CDS
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Overview

How do we make decisions?
- Why CDS?
- What is CDS?
- Five Rights of CDS
- How does CDS work?
- Taxonomy of CDS
- Adoption of CDS

How Do We Make Decisions?

- Information environment
- Econ (Bayesians) vs. Humans
  - Perceptual psychology and behavioral economics
  - Intuitive statistics
  - Heuristics & biases
    - Clinical reasoning
    - Choice architecture

Why Clinical Decision Support?

- Increased quality of care and enhanced outcomes
- Avoidance of errors and adverse events
- Increased efficiency
- Improved cost-benefit
- Enhanced provider and patient satisfaction

What is Clinical Decision Support?

A process for enhancing health-related decisions and actions with pertinent, organized clinical knowledge and patient information to improve health and healthcare delivery. Improving Outcomes with CDS, HIMSS 2012

Clinical decision support (CDS) provides clinicians, staff, patients or other individuals with knowledge and person-specific information, intelligently filtered and presented at appropriate times, to enhance health and health care. CDS encompasses a variety of tools to enhance decision-making in the clinical workflow. CDS at HealthIT.gov
Framework: The CDS Five “Rights”

- To improve targeted healthcare decisions and outcomes, well developed and deployed CDS interventions must provide:
  - The **right information** (evidence-based, actionable …)
  - To the **right people** (clinicians, patients …)
  - In the **right intervention** format (alert, order set, …)
  - Through the **right channel** (EHR, internet, mobile …)
  - At the **right points in workflow** (decision/action …)
How does CDS work?

Computable biomedical knowledge
Person-specific data
Reasoning or inferencing mechanism
Information

Combines knowledge to generate information
Filtered & Organized
Presented in context of the current workflow

End user can make informed decision quickly and take action

Clinical Decision Support Components

Information

Clinical Decision Support

Information

Algorithm

Filtered & Organized
Right Time in Workflow

Taxonomy of CDS

Medication Dosing Support (7 Tools)

Formulary checking
Default dose pick lists

Order Facilitators (9 Tools)

Complete order "sentences"
Order sets

Point of Care Alerts/Reminders

Interactions
Duplicates
Critical Values
Problem List

Relevant Information Display

Patient-specific data
Context sensitive user interfaces
Filters

Types of Clinical Decision Support

Medication Dosing Support (7 Tools)

Order Facilitators (9 Tools)

Formulary checking
Default dose pick lists

Complete order "sentences"
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Types of Clinical Decision Support

Expert Systems

Antibiotic recommendations
Calculators
Guidelines
Protocols
Ventilator Management
Diagnostic Support

Workflow Support

Order routing
Registry Functionality
Medication Reconciliation
Factors Influencing Adoption of CDS

- Payer initiatives to increase incentives for use of CDS
  - Pay for performance
  - ePrescribing
  - Meaningful Use
- Technology developments
  - Commission for Certification of Healthcare Information Technology (CCHIT)
  - The American Recovery and Reinvestment Act and Health IT Certification

Recommended Reading

- Timbie JW et al. A conceptual framework and protocol for defining clinical decision support objectives applicable to medical specialties. BMC Med Inform Decision Making. 2013

Resources

- HIMSS CDS Guidebook Series
- Open Clinical
- CDS/PI Collaborative: Getting Better Faster
- HIMSS Resource Library: Clinical Decision Support

Improving Outcomes with Clinical Decision Support

8:30 – 9:30 AM General Session

Improving Outcomes with Clinical Decision Support (Pharmacology CE 20%) The seminal Institute of Medicine, To Err is Human: Building a Safer Health System endorsed Clinical Decision Support (CDS) as one of the most powerful tools available in the national imperative toward improving patient safety and healthcare quality. CDS is a process for enhancing health care related decisions and actions with pertinent, organized clinical knowledge and patient information to improve health and healthcare. In this session, CDS interventions will be explored across the care continuum, providing different kinds of information to different care delivery participants in a variety of formats through different channels into various points in workflow.

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