Safety Enhanced Design Brief Clinical Decision Support

Clinical decision support (CDS) systems bring relevant information to the clinician at the point of decision making.

Implementing CDS systems presents many challenges such as:

- Complex system constraints
- Complex nature of information to be displayed
- Challenging human-computer interaction design
- Organizational and change management to ensure system adoption

CDS is one of the most complex subsystems available in EHR systems. This document reviews guidelines to *design useful and usable CDS interventions.*

2 To prevent alert fatigue, provide support beyond alerting

- Use indicators to signal potential conflicts before triggering an alert
- Provide reduced lists of options based on context (e.g. a short list of clinically appropriate painkillers is presented when pain is entered as the chief complaint)

3 Use alerts for high risks to patient safety (https://sbmi.uth.edu/nccd/SED/Briefs/ sedb-mu01.htm)

- Ensure alerts allow provider to control alerted order items by providing direct access to order management
- Block action completion until critical alerts are reviewed and acknowledged
- Ensure that alerts contain all necessary information to make a sound decision



To create useful, consistent and reliable communication of support material to the user

- Ensure your CDS system is capable of identifying preventable errors and informing the user of potential clinical hazards
- Adapt CDS interventions to the clinical workflow and not the opposite
- Create a system that supports human decision making rather than corrects it (e.g. give feed back on entered data as opposed to changing it automatically)

- Clearly differentiate alerts and interventions according to their type
- Show decision support elements near corresponding data entry fields or buttons
- Classify decision support elements (e.g. rules and alerts) by severity levels
- Incorporate insurance coverage information into the CDS scope
- Match the intrusiveness of the CDS intervention to the severity level of the problem
- Consider including automated machine-generated information views and automatic contextspecific data display functions





To deliver context information without overwhelming the user, use integrated context aids such as infobuttons

- Present infobuttons throughout the system
- Provide information and links to information sources for all evidence shown
- Provide chronology information on evidence delivered by the system

SHARPC NCCD

Learn more at https://sbmi.uth.edu/nccd/SED/Briefs/sedb-mu04.htm

Copyright © 2013, The University of Texas Health Science Center at Houston. SEDB-MU04 V1 - Clinical Decision Support 11/11/2013