Incorporating Clinical Decision Support into CPOE Workflow

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Mary Dallas, MD
Medical Information Officer
Presbyterian Hospital, NM

Presbyterian Healthcare Services, Albuquerque, NM, consistently ranks among the top 10 integrated healthcare delivery networks in the country, according to Modern Healthcare *magazine. To mobilize efforts around patient safety, the hospital created a task force that studied the entire medication use process and implemented computerized provider order entry (CPOE) in December 2005 as part of their closed loop medication safety strategy. Of critical importance to the success of this effort is the ability to deliver clinical decision support (CDS) in a manner that clinicians find acceptable.*

Beyond Alerts

A critical challenge for CPOE implementation is balancing the organization's goal of standardizing care and reducing ADEs with physician's acceptance of clinical decision support. The media and scientific literature clearly highlights reports of physician resistance to alerts, citing alert fatigue and annoyance from clinical decision support that is intrusive and inappropriate. There are, however, subtle and effective approaches to present clinical decision support that physicians will value and use.

The first challenge is defining CDS – the industry often interchanges the terms "alert" and "clinical decision support." However, true CDS encompasses a variety of tools and interventions which, in addition to alerts and reminders, also include order sets, clinical guidelines, workflow support, and reports and dashboards.

Creating an Effective CDS Strategy

Before Presbyterian introduces CDS, they first identify key problems and priorities. They then build CDS around those issues. Considerations in choosing the best approach to delivering CDS within their CPOE solution, Horizon Expert Orders™, are:

- When to deliver it within the workflow?
- What exactly does that constituent need to see?
- How intrusive should it be?

Based on these considerations, Presbyterian then designs the CDS so that it appears within the workflow in the least intrusive, yet most effective manner possible.

Presbyterian's Clinical Decision Support Strategies

Presbyterian's ultimate goal is to create CDS that physicians value, so they will adopt electronic ordering through CPOE. If done well, they deliver CDS that is so intuitive, that physicians don't realize they're being guided. Presbyterian considers a variety of factors in developing their strategy including:

- Initially limiting alerts to severe allergies and duplicate orders.
- Introducing CDS in familiar ways, through outlines, default values and electronic forms with pre-selected choices and calculations based on the patient's condition.
- Building for the physician mindset by filling in as many prompts as possible and avoiding extra clicks.
- Continually revising based on clinician feedback.

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Clinical Leadership Conversation

Dr. Mary Dallas, Medical Information Officer, Presbyterian

Mary Dallas, MD is the Medical Information Officer for Presbyterian Healthcare Services, practicing with Presbyterian's Adult Hospitalist Physician Group. She's been involved in the organization's CPOE initiative as a physician champion since the beginning. She has been instrumental in adapting multiple sources of content to meet the medical staff's needs and simplifying the incorporation of clinical decisions support in their CPOE solution, Horizon Expert Orders.

***Q:** You mention that you limit alerts when initially introducing CPOE to a new specialty. Why is that?*

A: Alerts and reminders are only one form of clinical decision support. While they are the ones most are familiar with, they are often the least effective. Clinicians, particularly physicians, find them intrusive and they don't like them. When you first introduce CPOE, it's important to drive clinicians to the system and understand how it works, without interrupting their workflow.

***Q:** You also try to deliver CDS within CPOE in a way that physician's don't realize they are using it. What do you mean by that?*

A: Clinical decision support may limit the clinicians' treatment choices, but if done intelligently, it can be subtle, effective and overcome resistance. For example, you can limit ordering of non-formulary drugs by simply not offering them as an option.

***Q:** Would the inability to order a specific medication cause frustration?*

A: Yes, it could; that question points out all the factors you need to take into consideration. Another way to handle formulary issues that avoids frustration is to insert some very basic text in the order set such as, "this is a non-formulary drug and will be automatically substituted" or "this medication is non-formulary, please contact pharmacist to review alternative order options." That avoids frustration by not being able to find it, it shows what the formulary drug is, and if the physician wants to do something else, they have to call the pharmacy. It makes it easy to do the right thing and harder to do what you may not want them to do -- yet you are still providing choices.

***Q:** Can you provide another example of how you make it easy to do the right thing?*

A: We tried to standardize sliding scale insulin on paper a while ago. It was hard to get physicians to comply because it was easier for them to continue to use their familiar algorithms. With CPOE, we were able to create an electronic form that calculates insulin dose based on our protocols, and contains a set of orders that they can enter with one click. If we develop CDS that makes following guidelines easy, that's what they'll do.

***Q:** When you talk about building for the physician mindset by filling in as many prompts as possible, do you consider that CDS?*

A: Absolutely, those types of prompts and default values also fall into the category of delivering CDS in an unobtrusive manner. If you pre-fill a number in a dose box, or create a drop down with the three most common dose choices, it gives them a guide of where to start without having to look up the values. You can also create form rules that fill in values based on patient parameters, such as age or weight.

***Q:** Another point you made was the importance of revising CDS based on clinician feedback. How difficult is it to revise and create new CDS?*

A: You never can test for all the nuances when you put a new order set or form out, so it's critical to stay agile and flexible. That way our clinicians feel this is their system, not something we are forcing on them. We have tools that allow us to create sophisticated, effective clinical decision support in-house. Because of that, we can be responsive to issues or problems.

***Q:** What role do you think strategies like this play in physician adoption of CPOE?*

A: How you present CDS plays a critical role in how CPOE will be accepted by physicians. For example, our physicians love our electronic, pre-populated guidelines and protocols – they appreciate that we've incorporated best practices and note how easy and quick it is for them to place orders. Constantly slapping physicians in the face with an alert that screams, "you're wrong," or continually creating an interruption in the workflow is not going to endear anyone to use the solution. It's imperative that organization's present CDS so that it meets the needs of the constituent within that particular point in the workflow.

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