Pharmacy Automation and Technology

Is It Time for the Customizable Infobutton?

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Infobuttons are intended to provide links to context-sensitive information in online resources to support clinical decision making. In this issue, we discuss challenges that impact the maximal effective use of Infobuttons. We also suggest methods to facilitate the role of Infobuttons as a tool to support optimal use of medications.

The medication use process can be negatively impacted by inappropriate patient selection for drug therapy, nonscientific ordering behaviors, incorrect preparation procedures, inaccurate administration, and poor follow-up procedures. The process is further complicated when patients demand therapeutic interventions and providers believe that medication use is appropriate, even when there is no scientific evidence to support these treatment decisions. Access to information can aid clinical decision making and avoid the problems affecting the medication use process.

HL7 International Context-Aware Information Retrieval standard (the HL7 “Infobutton” standard) has been widely adopted since 2007. Infobuttons are decision support tools that provide links within electronic medical record (EMR) systems to online information. Many practitioners are discovering that the Infobutton is defaulting to a static, tertiary reference monograph that is intended to guide decisions for all who participate in the medication use process. But decision support information is seldom a one-size-fits-all proposition. We believe that the Infobutton should be customizable for an individual health system’s use.

Every guideline that is distributed to health systems gets vetted by a clinical review committee prior to being placed online for general use. We worked on a project where such a guideline was distributed to 128 hospitals and nearly every hospital found something to tweak in the guideline. We believe that Infobuttons could appropriately publish checklisted, evidence-based decision support to prompt both experienced and naïve users throughout the medication use process. Infobutton

use could also lead to more updates, as feedback is gained from the use of specific medications and problems emerge in actual practice.

The Agency for Healthcare Research and Quality considers a checklist to be “an algorithmic listing of actions to be performed in a clinical setting” with the intended goal being “to ensure that no step will be forgotten. Although a seemingly simple intervention, checklists have a sound theoretical basis in principles of human factors engineering and have played a major role in some of the most significant successes achieved in the patient safety movement.”¹ Patient safety movements continue to promote the benefit of checklist-based approaches. Although mistakes can happen, slips are very preventable with the appropriate use of this tool.

Clinicians are pressed for time due to the emergent conditions of their patients and their total patient loads. Under this pressure, they must make decisions about the safe use of drug interventions for which they may have little or no prior experience. This situation is not exclusive to physicians; it occurs across the medication use process. Therefore, the ideal Infobutton should allow systematic access and concurrently allow users to drill down to the precise nugget of information that is needed. We recommend navigation options that include links to these nuggets but also provide the ability to expand and collapse sections of extensive monographs to aid the rapid access to the desired decision support.

When calculations about medications are required, it would be ideal to have patient demographics and lab values accessible and integrated to the Infobutton so that values can be verified and calculations can be made from prepopulated data. When integration is not available, data entry should be supported through

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checkboxes, radio buttons, pull-down lists, and controlled keyboard/touchscreen inputs. Instructions that require preparation procedures for drug products should utilize video demonstrations or illustrated steps that demonstrate how to achieve optimal results. Infobuttons should be designed to prevent errors by requiring users to start with a checklist that has been cleared automatically from any previous user. Additionally, print capabilities and download capabilities should make the Infobutton materials available for in-service education when desired.

The use of checklists and other decision-support tools is not without controversy. Many clinicians see them as time robbers and yet another distraction to their thought processes. This viewpoint may indicate the need for a shift in organizational culture to put safety first, employing procedures, policies, and tools to enable a unified focus. A shift to a culture of safety often advances the use of decision-support tools. It may be necessary to hold providers accountable when they fail to use these tools when working with either new medications or medications that have known safety implications and have created problems in the medication use process. The ability for an individual health system to customize decision-support tools may help providers feel that they have ownership of the approach and may undercut their criticism that guidelines promote cookie-cutter medicine. Each Infobutton would be available on every screen in the EHR any time a medication consideration is being addressed. Thus, no provider would have to pull out a smart phone or go to another program outside of the EHR to access information.

We found out through an advisory board that many drug products are associated with expert users in health systems. A further customization of an Infobutton would be to add a list of these experts and their contact information that would be available for clinicians when they experience difficulty with the use of these products or procedures. Most pharmaceutical companies also provide additional support in the form of 24-hour medical information hotlines and product-specific Web sites. We believe that the best customizable Infobutton would have a controlled editing environment that would allow US Food and Drug Administration–approved content to be displayed initially and would have the capacity for additional helpful information to be added through editing of the distributed information button content. The restoration of the original text back to the distributed document would also be a desirable feature for this content.

We are excited that the opportunity for the receipt of just-in-time information continues to be enhanced. Although we know that errors and mistakes will occur, time-proven methods such as checklists can make the medication use process increasingly safe. We encourage your comments and questions to either Bill at felkebg@auburn.edu or Brent at foxbren@auburn.edu. We would enjoy continuing this conversation.

REFERENCE

1. Agency for Healthcare Research and Quality. Checklists. AHRQ Patient Safety Primers. Updated August 2014. <http://psnet.ahrq.gov/primer.aspx?primerID=14>. Accessed December 8, 2014. ■