



Getting Patients to Meaningful Use Using the HL7 Infobutton Standard for Information Prescriptions

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Getting Patients to Meaningful Use

Using the HL7 Infobutton Standard for Information Prescriptions

Patient Engagement Is Only a “Button” Away

Imagine—anytime you have a health care question, face a treatment decision, or need to learn a new self-management skill, all of the tools you need are presented before you in a tailored, personalized, and easy-to-use way.

With help from the HL7 “Infobutton standard,” patients should expect no less from each and every health care encounter. And with that same help, physicians can expect to more actively engage patients in their care without derailing clinic workflow. The result will revolutionize the effectiveness of patients taking an active role in their own care.

Enabling Meaningful Use Through Emerging Standards

The American Recovery and Reinvestment Act of 2009 (ARRA) contains provisions for reimbursing health care providers who adopt health information technology (HIT) that meets certain “meaningful use” criteria. One of the goals of the meaningful use criteria is the use of HIT to “engage patients and families.”ⁱ

Getting decision support and self-care information to a patient relevant to his or her current “moment in care” is a key part of meaningful use.

As stated on the Web site of the Office of the National Coordinator (ONC), “The focus on meaningful use is a recognition that better health care does not come solely from the adoption of technology itself but through the exchange and use of health information to best inform clinical decisions at the point of care.”ⁱⁱ Getting decision support and self-care information to a patient relevant to his or her current “moment in care” is a key part of meaningful use.

Effectively integrating patients and families into the meaningful use of HIT may be a formidable challenge, but it is critical to the success of health care reform. The design of HIT applications has traditionally centered on the creation and storage of legal and clinical records, patient administration and billing activities, and communicating health information within closed care delivery networks. Each system is designed using these lenses. The intended users are clinicians and care support teams. Little attention has been given to the patient use case.

If the information isn’t relevant and doesn’t help them make a better decision or improve the self-management of their specific health problem, then it just doesn’t help.

At the same time, the patient use case is not at all simple. Patients need information that is specific to who they are, where they are, and what treatment and self-management choices they face at a specific clinical moment. If the information isn’t relevant and doesn’t help them make a better decision or improve the self-management of their specific health problem, then it just doesn’t help. For the expanded vision of meaningful use to succeed, developers and implementers of HIT need a way to integrate the complex needs of patients and families into the HIT infrastructure without fundamentally changing design or hindering use.



How Standards Can Help Engage Patients

As in other aspects of HIT, standards for patient engagement are invaluable. To implement the meaningful use goal of engaging each patient at his or her moment in care, a well-accepted standard would provide three primary benefits:

1. A clear patient engagement and use case roadmap for electronic health record (EHR) developers and implementers to design and plan against.
2. A way to significantly reduce development effort through a scalable, sustainable solution design.
3. A framework for interoperability so that patient information, instructions, and self-management tools can be deployed consistently and shared across HIT, telemetry, biomedical, clinical, and billing systems.

This same HL7 standard can also be used to trigger relevant, helpful patient education orders—or “information prescriptions”—for the patient.

The HL7 Infobutton Standard

The Health Level 7 International Context-Aware Knowledge Retrieval standard ⁱⁱⁱ has been widely adopted since 2007. Nicknamed the “HL7 Infobutton standard,” it facilitates the delivery of a set of standardized information about the patient, the provider, and the activity of a specific care encounter or moment in care. An Infobutton manager (or equivalent) accessed by an EHR application can then pull from that set the information it needs for any relevant use case. In most cases the Infobutton has been used to bring up decision support information for the clinician.

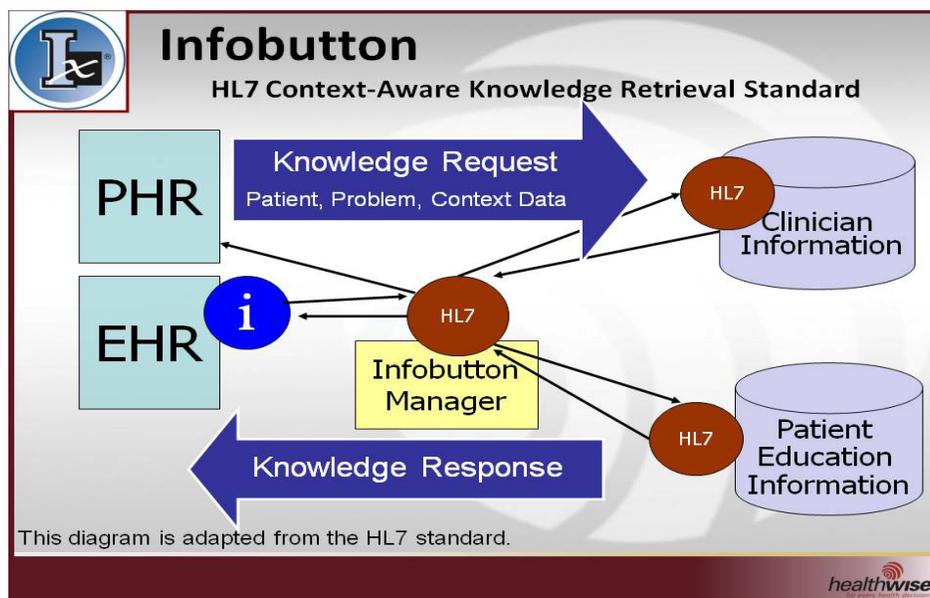
This same HL7 standard can also be used to trigger relevant, helpful patient education orders or “information prescriptions”—for the patient. While the knowledge request can be triggered by the click of a button, the button click is not always necessary. The information prescriptions can be automatically generated, based on the context of the patient’s particular moment in care, for presentation in a handout or secure message, or on the personal health record (PHR).

In an EHR, a clinician triggers a knowledge request to a content provider. (A knowledge request differs from a query, because it returns tailored, targeted, and relevant information instead of the overabundance of documents with varying degrees of relevance that a standard query might deliver.) The content provider responds with a list of patient information prescriptions appropriate for that patient and that specific care encounter.

In the PHR, the request can be launched by the patient or automatically triggered by a scheduled appointment, a preventive service that is due, a medical test report, or any other clinical event. The content provider responds with relevant Web-based consumer health content.

By having both synchronous and asynchronous triggers, systems can generate relevant, helpful information at every point in the health care continuum. In all cases, the knowledge request and response protocols are defined by the HL7 Infobutton standard. This minimizes development effort and provides a single consumer content integration solution for both HIT developers and content providers.

We propose that when the standard is used to request and deliver information prescriptions for the patient’s use, it be considered the IxButton™ Solution.



The IxButton™ Proposal

The current HL7 retrieval standard has been nicknamed the Infobutton standard. We propose that when the standard is used to request and deliver information prescriptions for the patient's use, it be considered the IxButton solution.

Why Ix® button? Information therapy (Ix) is the prescription of the right information to the right person at the right time as part of the process of care. The concept changes the role of consumer health information from one where information is "about" the patient's care to one in which the information is a key part of care. It is part of the therapy, and hence the name information therapy. An Ix is relevant, specific information for each patient's moment in care. For short, we call each information prescription an "Ix" just as a medication prescription is generally known as an "Rx."

As with provider-focused applications, the specific knowledge requests made through the IxButton solution will depend on its placement within an EHR or PHR. For example, if an IxButton solution is engaged while a clinician is reviewing a lab report for a particular patient, the information prescription generated would relate to that test in the context of the patient's age, sex, diagnosis, and location of care. In other words, the IxButton solution brings up information not only relevant to the patient's current moment in care but also relevant to the clinician's particular location in the EHR or PHR at the time the IxButton solution was engaged.

We believe that this standard, paired with best-of-breed consumer health content and well-designed implementations, will become the cornerstone for including patient and family engagement in meaningful use requirements.

About Healthwise HL7 Infobutton and IxButton Efforts

Healthwise is an active participant in the HL7 Clinical Decision Support Technical Committee, which is in charge of the Infobutton standard development, and is working with other volunteers on the committee to define the existing Infobutton standard. We believe that this standard, paired with best-of-breed consumer health content and well-designed implementations, will become the cornerstone for including patient and family engagement in meaningful use requirements.

Looking to make the access to Ix easier, Healthwise is currently developing an IxButton manager application with the U.S. Army's Telemedicine and Advanced Technology Research Center (TATRC) for integration in the Department of Defense's EHR system, AHLTA. With a focus on providing specific patient education materials and instructions during a visit, the IxButton solution will help users of AHLTA (or any other EHR or HIT application) provide the right information to the right person at the right time.



Combining the HL7 standard and the interoperability of the National Health Information Network (NHIN) infrastructure will allow for a consistent, common, and interoperable way to share contextual information about a patient's health event with an external content source.

While the IxButton solution will be specifically tailored to retrieve content from the Healthwise content repositories for solutions ranging from decision aids to patient instructions for after-visit care, the same protocols could be applied to any other high-quality content source. Because the content retrieval is automated and context-aware, the clinician can access relevant, helpful information quickly and within the constraints of the workflow.

The Evolution of Patient Engagement With HIT

In the future, meaningful use for engaging patients and families will involve more than simply providing appropriate education resources. As the use of HIT by patients becomes more pervasive, the flow of information will become increasingly bidirectional.

Patient interaction with HIT will not only be a byproduct of the health care delivery system, but an integral part of the system that will be valued and utilized in the clinical record.

Patient engagement is a pillar of the new models of care currently being discussed, such as the Medical Home. Tools that engage patients and family members will still help them comprehend their medical care, make decisions, and take action. But in addition, these tools will record patients' understanding of the information and actions taken to "inform clinical decisions at the point of care." Patient interaction with HIT will not only be a byproduct of the health care delivery system, but an integral part of the system that will be valued and utilized in the clinical record.

The HL7 Infobutton standard will evolve and be paired with new standards that support the use of patient-generated information. The observations and actions of patients will be recorded and shared in a structured way, just as they are today for clinicians.

Now Make It Meaningful for Patients

Most medical content providers and EHR developers are already implementing some level of the HL7 Infobutton standard for clinician use. The standard that was approved by HL7 for "draft" use in 2008 is going through the final process to become an official HL7/ANSI standard, which should happen sometime mid-2010.

Now it's time to get the patient to meaningful use.

Now it's time to get the patient to meaningful use. The current Infobutton standard addresses the patient education knowledge request to the content vendor. A future version of this standard (which is under development at HL7) will cover standards for the knowledge source (or "Ix") response, to assure that information prescriptions and tools delivered can be ported easily across interoperable systems.

What can you do?

- 1. Make it work.** Stay focused on successful implementation of the current HL7 Infobutton standard.
- 2. Look ahead.** The draft "Ix" response standard may be ready by the end of 2010. Get ready to implement it for a 2-year trial period.
- 3. Wave the flag.** Advocate for assuring that standards and rules provide meaningful decision support tools for patients. And work hard to make sure that patients use them.

The primary health care provider is almost always the patient. By enabling patients and their caregivers to fully engage in the use of HIT, the IxButton solution will allow people to do much more quality care for themselves, better ask for the care they need, and more confidently say "no" to care that is not right for them. ■



Notes

- "Health IT Policy Council Recommendations to National Coordinator for Defining Meaningful Use Final- August 2009," http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS_0_10741_888532_0_0_18/FINAL%20MU%20RECOMMENDATIONS%20TABLE.pdf, accessed on Dec. 30, 2009.
- U.S. Dept. of Health and Human Services, Health Information Technology, "Meaningful Use (overview)," <http://healthit.hhs.gov/portal/server.pt?open=512&objID=1325&parentname=CommunityPage&parentid=1&mode=2>, accessed on Dec. 14, 2009.
- "HL7 Version 3 Standard: Context-aware Information Retrieval (Infobutton) Topic," http://www.hl7.org/v3ballot2008may/html/domains/uvds/uvds_Context-awareInformationRetrieval%28Infobutton%29.htm, accessed on Dec. 30, 2009.

For more information about the HL7 Context-Aware Knowledge Retrieval Standard, visit:

Topic Overview:

http://www.hl7.org/v3ballot2010JAN/html/domains/uvds/uvds_Context-awareKnowledgeRetrieval%28Infobutton%29.htm#REDS_DO010001UV-Infobutton-ic

URL-Based Implementation Guide:

http://www.hl7.org/v3ballot2010JAN/html/domains/uvds/Infobutton_IG.pdf

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