

# Implementation of Infobutton Functionality using HL7 Infobutton API: A Case Study with Clin-eguide™

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## Abstract

With the proposal of an HL7 Infobutton standard, companies have begun offering access to medical resources via this method. This poster details a pilot study implementing infobuttons using an application programming interface (API) offered by Clin-eguide, which follows the proposed standard. A prototype was developed within RetroGuide, a research query application, in under one week.

## Introduction

Infobuttons are a very useful tool to provide immediate, context-driven information to healthcare providers. Historically, infobuttons and infobutton managers have had to deal with knowledge sources accessed through different interfaces<sup>1</sup>. However, with the proposal of an HL7 Infobutton standard<sup>2</sup>, third-party providers of health information have begun offering easy, standardized methods to integrate with knowledge sources. Marshfield Clinic has been evaluating one such offering, Clin-eguide, since October 2008. Clin-eguide provides an API based on the proposed HL7 Infobutton standard, and exposes it via URL parameters. Once access is granted to Clin-eguide, a site can immediately begin testing its features using just a web browser.

## Methods

The Clin-eguide manual<sup>3</sup> was used to implement the desired functionality within RetroGuide's Individual Patient View (IPV), which displays observations of interest for a single, anonymized research subject. Infobuttons were added to each diagnosis utilizing the ICD9-CM code. Infobuttons for laboratory items required a custom mapping for the most frequent 40 laboratory items between MECCA lab terms (internal terminology used by Marshfield Clinic's CattailsMD EHR) and LOINC terminology. Separate infobuttons were offered and focused on context of:

- Information recipient (patient or provider)
- Task context (conditions or medications)
- Subtopic (treatment or diagnosis)

Each generated link also included context information for age, and severity observation for lab results.

A search for ICD9-CM code "427.31" (atrial fibrillation) to retrieve evidence-based guidelines for a healthcare provider would be formatted as:

[http://{BASE\\_URL}/hl7?mainSearchCriteria.c.cs=2.1](http://{BASE_URL}/hl7?mainSearchCriteria.c.cs=2.1)

6.840.1.113883.6.103&mainSearchCriteria.c.c=427.31&informationRecipient=provider

Changing the information recipient to "patient", returns a listing of patient handouts instead.

## Results

Implementation of a fully functional prototype took under one week of development effort. Within that time we were able to implement all context modifiers currently offered by the Clin-eguide API, which included information recipient, subtopics, task context, subject age and lab observation severity.

## Discussion

These results are very encouraging for other healthcare institutions which are looking to implement infobutton functionality in the near future. We found the API offered by Clin-eguide to be well-documented and easy to use, which we believe contributed to a quick implementation time. While the proposed HL7 standard accounts for other features such as multiple term searching and providing results in the context of gender, the API implementation by Clin-eguide did not offer them. Feedback to suggest improvements to support more API features and enhance the knowledge base have been communicated to the vendor.

## Conclusion

Clin-eguide's implementation of the proposed HL7 infobutton standard allowed us to quickly implement infobutton technology. Future work in this area will be to mine usage patterns of Clin-eguide and investigate extensions to the infobuttons implemented in RetroGuide and the CattailsMD EHR.

## References

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