Bringing Knowledge to Users in One Click: Infobuttons in the Problem List of an EHR

**Jose F. Rodriguez, Emilio S. Mole, Luciana Rubin, Sonia E. Benitez,
Carlos M. Otero, Daniel R. Luna, Fernan Quiros**

Department of Health Informatics, Hospital Italiano, Buenos Aires, Argentina

Abstract

The infobuttons allows the solving of information needs. In our study, the use of Infobuttons is described, analyzing the number of queries to UpToDate® from the problem list of an Electronic Health Record. There were 26419 requests in 8 months. The highest average use occurred in June. The links to knowledge bases can help to solve information needs, even before they occur.

Keywords: Electronic Health Records, Decision Support Techniques, Information Storage and Retrieval

Introduction

In medical practice it's common for health practitioners to have doubts, especially regarding clinical cases which they deal with on a daily basis, particularly those related to diagnosis and treatment [1]. The availability of knowledge bases, such as UpToDate®, depends on a subscription by the user, and it also requires the accomplishment of a manual search, which presents a certain complexity in order to achieve the expected results [2].

The infobuttons are tools that allow different patient-specific data to be added to a search, allowing the user to obtain results with greater completeness and precision, using HL7 interoperability standards [3]. The purpose of this study was to describe the use of Infobuttons in our Electronic Health Record (EHR).

Methods

A descriptive, observational study was carried out analyzing the Infobuttons usage records in the problem list of the EHR. The data collection was performed from March 21, 2016 until October 31, 2016. The use was determined by each log accessing the tool taking into account the click on Infobuttons to access the response of UpToDate®.

Results

In the analyzed period, a total of 26410 queries were registered to the Infobuttons tool, of which 905 occurred during last 10 days of March, 3855 in April, 3462 in May, 4704 in June, 3685 in July, 3629 in August, 3216 in September, and finally 2963 in October. When we analyzed the tool use, discriminating by day of the week, it was possible to appreciate that the greatest number of requests to Infobuttons were made during Monday, Tuesday, Wednesday and Thursday, accounting for 4614, 5141, 4832, and 4873 interactions, respectively.

The analysis of use, according to schedule, showed that most of requests were performed in the morning hours between 9 am and 12 pm. A peak was detected at 11 am accounting for a total of 2348 requests to Infobuttons with a decrease to 214 at 5 am. Regarding to the daily average, 117.9 consultations per day were registered, while during the first month of the implementation of the tool was maintained in 90.5 queries per day. An increase was detected in the month of June to 156.8 per day, remaining at around 100 daily visits in the remaining months. The problems that more frequently needed the contextual help provided by Infobuttons as a clinical decision support were 'Patient reviewed', 'Preoperative state', 'Clinical Finding', 'Patient currently pregnant', 'High blood pressure', 'Procedure related finding', 'Abdominal pain', 'Postoperative state', 'Nutritional support', and 'Tobacco dependence syndrome'.

Conclusion

In this study, we obtained an understanding of the online resources and the Infobuttons use in a problems list. The availability of these links to knowledge bases can help solve information needs, potentially improving patient care and decision making.

References

[1] S. Hunt, J.J. Cimino, D.E. Koziol, A comparison of clinicians' access to online knowledge resources using two types of information retrieval applications in an academic hospital setting. *J Med Libr Assoc* **101** (2013), 26–31.

[2] G. Del Fiol, T.E. Workman, P.N. Gorman, Clinical questions raised by clinicians at the point of care: a systematic review, *JAMA Intern Med* **174** (2014), 710–718.

[3] JJ. Cimino X. Jing, G. Del Fiol, Meeting the electronic health record "meaningful use" criterion for the HL7 infobutton standard using OpenInfobutton and the Librarian Infobutton Tailoring Environment (LITE). *AMIA Annu Symp Proc* **2012** (2012), 112–20.

Address for correspondence

José Federico Rodríguez, Department of Health Informatics, Hospital Italiano, Juan D. Perón 4190, C1181ACH Buenos Aires, Argentina.

E-mail: josef.rodriguez@hospitalitaliano.org.ar.