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Infobuttons: A Study of Usability

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Abstract and objective

Studies of clinician's information needs while treating patients have shown that the resolution of these needs is often deferred or fails, which may lead to medical errors. The Infobutton Manager was developed to help improve the resolution of information needs by providing users with links to on-line health information resources. The aim of this study was to determine the usability of the Infobutton interface to resolve clinicians' information needs. We provided clinicians with typical case scenarios using a computerized order entry system (CPOE) and Infobuttons and asked them to verbalize their thought processes as they were using the CPOE. We video-recorded the computer screens as the users worked, conducted brief exit interviews, and analyzed these data. Results indicated that the participants found the resources provided by Infobutton helpful and easy to use.

Keywords:

usability testing, clinical information needs,
information retrieval decision support

Introduction

Though technology for clinical care is created to facilitate the clinician's workload and enhance patient care, tools that are inadequately designed can actually have adverse effects [1]. Inadequate design can result from a disconnect between the design process and the needs of the end-users [2]. Infobutton is a tool designed to provide clinicians with access to on-line health information resources to quickly resolve their information needs [3]. This study explored the usability of a new user Infobutton interface which was designed to be easier to read, more concise, and have more consistent navigation.

Methods

We conducted the present laboratory study to seek in-depth feedback from clinicians about the design and usability of Infobuttons within a CPOE system. Each participant was given three typical scenarios to be interpreted using the CPOE system and Infobutton. The computer screen was video recorded using Morae™ software. Participants were asked to "think aloud," that is to verbalize their thoughts. At the end of the session, the researcher conducted a brief exit interview. A previously established coding framework was applied to the data to characterize information needs.

Results

Two nurses, one physician, and one physician's assistant took part in the study, yielding a total of 79 information needs. Twenty-three of these needs (29%) were related to drug information, 28 (35%) concerned institutional procedures or policies, and the remainder were related to patient care and the treatment plan. Forty-eight information needs (60%) were successfully resolved using Infobuttons, 15 were deferred, and 14 needs failed to be resolved. Fifty-one needs (65%) were from an external source (e.g., Micromedex) and 26 (33%) were from an internal source (e.g., the local intranet). Exit interviews revealed an overall satisfaction with the resources provided by and the usability of Infobuttons. Excess information making navigation difficult was one of the problems identified.

Conclusion

Although clinicians show a high occurrence of information needs as they treat their patients, many of these needs can be met with Infobuttons All participants agreed that the information resources provided by Infobutton were valuable and easy to understand. This study imparted us with insight on the questions clinicians need to have answered for effective decision-making, and accentuated the need to be mindful of information overload.

References

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