Improving Clinical Communication with a Virtual Whiteboard

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Effective clinical communication among health care providers is essential to provide high-quality care for patients. Poor communication has been recognized as a significant source of medical errors. To help facilitate clinical communication between physicians and nurses, we have developed a virtual whiteboard extension to our clinical information system, WebCIS. The virtual whiteboard can be used to identify other health care providers associated with the users patients, and facilitate exchange of brief asynchronous communications among those providers.

INTRODUCTION

There are several reasons why clinical communication fails, but studies at our institution have identified 2 major areas to intervene. First, for both physicians and nurses, the identification and contact of other providers associated with a common patient was felt to be difficult. Second, much communication was felt to be interruptive, causing inefficiency and high cognitive workload.

METHODOLOGY

Identifying Providers

It is challenging to correctly identify the specific physicians associated with a patient given the complex and dynamic nature of team structures in an academic medical center. Therefore, we designed a Web-based interface to capture intern schedules as they are entered each month by the Department of Medicine. Interns verify this schedule during the normal process of adding a patient to their primary list in WebCIS. The verification dialog displays the names of other team members based on the previously entered schedules. It also asks if the intern is the primary physician that should be called regarding that patient. Nurse-patient assignments are also captured by a Web-based interface at the beginning of each shift.

On the virtual whiteboard, each patient is associated with the providers that have been entered by the intern and nurses. Clicking the provider's name on the whiteboard provides a popup dialog with a picture of that provider as well a beeper number, and e-mail.

Reducing Interruptions

To limit the number of paging interruptions, the virtual whiteboard has a mechanism for sending simple messages to other providers asynchronously. This system provides a simple mechanism for sending simple messages with a return receipt to ensure the message has been read, and a mechanism for indicating that the message has been acted on. For example, a nurse could send a message to the intern to remind him that a medication needs to be renewed. When the intern checks the whiteboard he/she can send back a message stating that the message has been read. Alternatively messages can be deleted, which prompts for a message back to the nurse regarding the task has been completed.

Authentication for the whiteboard systems is handled by WebCIS. The Web-based interface allows for easy viewing of the whiteboard anywhere there is access to the web. Additionally, the patient provider lists and messaging system are both designed to be viewed via a wireless palm device.

CONCLUSIONS

By providing methods to identify other providers and send asynchronous messages with feedback, the virtual whiteboard is designed to help facilitate clinical communication.

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