Improving the Usability of Electronic Health Record Alerts for Nursing Using A Heuristic Checklist

PURPOSE
The purpose of this project was to apply usability principles to the organization’s 36 non-medication related nurse alerts using a heuristic checklist to identify problems and offer solutions.

BACKGROUND
Alerts provide valuable information to nurses at the point of patient care. Alerts can be disruptive and, when poorly designed, contribute to alert fatigue. Usability is thus a key factor when developing alerts in order to overcome alert fatigue. Many tools are available to test usability.

The project was conducted at a large cancer center in the Texas Medical Center located in Houston, Texas.

METHODOLOGY
The heuristic checklist was developed based on guidelines created by the National Center for Cognitive Informatics & Decision Making in Health Care. Each alert was reviewed and usability problems were identified along with specific heuristic violations. Alert problems were identified and fully described based on the heuristics. Recommendations for fixing the problems were provided.

RESULTS
Ninety-one usability problems were identified with 222 heuristic violations. Of the 222 violations, the most common were in terms of consistency (38), control (27), error prevention (27), and closure (25).

The problems’ severity assists in prioritizing the extent to which the problem affects the nurses and provides prioritization for fixing the problem. The majority of the 91 problems were minor (44 of 91; 48.4%) in severity with a low priority to fix. One potentially catastrophic problem was identified.

IMPLICATIONS
The use of a heuristic checklist is a convenient, fast, and inexpensive means to assess alert usability. The results of the heuristic evaluation can be provided to the study organization for use along with the actual checklist. The list of prioritized alert usability problems along with the recommended solutions can be used to quickly remedy existing problems. The heuristic tool developed for this study can be used by the organization as part of it alert governance structure.