



ABSTRACT

Title: Usability Evaluation of a Decision Support Innovation Linking Evidence Based Practice with HOBIC Outcomes Measurement

Authors: D.M. Doran, J. Mylopoulos, A. Kushiruk, L. Nagle, S. Sidani, A. Tourangeau, N. LeFebre, C. Reid-Haughian, T. DiPietro, J. Carryer

Background

With the current explosion of accessible information and continuing expansion of professional knowledge it is a challenge for nurses to regularly access information that is current and reliable. Heavy workloads limit nurses' attention to information needs, and, as a result, they often limit their information search to obtaining patient-specific information from patients and families, the chart, and other existing clinical information systems. Information technology can help promote research utilization and foster safe, high quality care through tools that will make more extensive information accessible to the front line clinician at the point of decision making. The premise of this project is that embedding evidence-based practice resources, such as best-practice guidelines (BPGs) into electronic tools, will allow for more efficient access to evidence, leading to better treatment and improved patient outcomes.

Purpose

The study evaluated the usability of a point-of-care decision support prototype system for linking best practice guidelines to Health Outcomes for Better Information and Care (HOBIC) outcomes measurement.

We developed a prototype web-based software application, "e-Volution in Outcomes-Focused Knowledge Translation"[™], that equips nurses with handheld units to assist in the collection of bedside patient data and provide real-time feedback, including suggested best-practice guidelines tailored to the individual patient's needs. The tool has two primary benefits: firstly, it impacts nurses' access to evidence-based resources, because best practice recommendations based on an individual patient's data are delivered directly to the clinician, in real time, so that problems can be identified and addressed immediately; secondly, by improving evidence based practice, it has the potential to improve the quality of care and patient outcomes.

Methods

A quasi-experimental field study was used to evaluate the usability of the prototype system. The setting was three acute care hospitals and three home care agencies. The sample consisted of 191 nurses and 313 patients. Nurses on the intervention units were trained to use Personal Digital Assistants (PDAs) to collect and record patient outcomes information through a wireless network and access best practice guidelines to support evidence-based decision-making. Questionnaire data were collected on the quality of communication and usability of the prototype system.

Results

The majority of participants were registered staff nurses (90%), female (92%), working full-time hours (80%). On a scale of 1 (low) to 9 (high), the highest rated items were adequacy of power to enter information (7.8), image of characters on screen (7.7), size of screen (7.7), and consistency of messages (7.7). The lowest rated items were flexibility of data entry (6.1) and satisfaction with data entry experience (5.9). There was a significant difference in the quality and timeliness of communication between experimental and control acute care units at post-test. No differences in evidence-based practice were found.

Conclusion

The prototype system has the potential to improve nurses' collection and utilization of outcomes information.

Author contact

For further information about the study please contact Diane Doran, RN, PhD, FCAHS, Professor, Lawrence S. Bloomberg Faculty of Nursing, University of Toronto, 155 College Street, Suite 130, Toronto, ON, M5T 1P8. diane.doran@utoronto.ca

References

1. MacIntosh-Murray, A. and C.W. Choo, Informational behavior in the context of improving patient safety. *Journal of the American Society for Information Science and Technology*, 2005. 56 (12): p. 1332-1345.
2. McKnight, M., The information seeking of on-duty critical care nurses: evidence from participant observation and in-context interviews. *J Med Libr Assoc*, 2006. 94(2): p. 145-151.
3. Bates, D.W. and A.A. Gawande, Patient safety: Improving safety with information technology. *New England Journal of Medicine*, 2003. 348(25): p. 2526-2534.
4. Doran, D.M., et al., Evidence in the palm of your hand: development of an outcome-focused knowledge translation intervention. *Worldviews on Evidence-Based Nursing*, 2007. 4(2): p. 1-9.