Chapter 3.8
Nurses' Perceptions of Using a Pocket PC for Shift Reports and Patient Care

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ABSTRACT

Nurses working in hospitals with paper-based systems often face the challenge of inefficiency in providing quality nursing care. Two areas of inefficiency are shift-to-shift communication among nurses and access to information related to patient care. An integrated IT system, consisting of Pocket PCs and a desktop PC interfaced to a hospital's mainframe system, was developed. The goal was to use mobile IT to give nurses easier access to patient information. This paper describes the development of this system and reports the results of a pilot study: a comparison of time spent in taking and giving shift reports before and after the study and nurses' perceptions of the mobile IT system. Results showed significant difference in taking shift reports and no significant difference in giving shift reports. Nurses stated that quick and easy access to updated patient information in the Pocket PC was very helpful, especially during mainframe downtime.

INTRODUCTION AND BACKGROUND

The quality of the American healthcare delivery system has been problematic. The Institute of Medicine (IOM) (2001) identified six dimensions

of quality: safe, effective, patient-centered, timely, efficient, and equitable. However, in hospitals with paper-based delivery systems, nurses often face challenges in meeting these expectations. Two areas of inefficiency are communication among nurses and accessing information relevant to patient care.

Paper-based shift reports and patient management can be time-consuming. At the beginning of each shift, nurses take reports of their patients. They use self-designed paper worksheets to write key patient information (e.g., diagnosis, physical or psychosocial status, treatments, tests, etc.) and to organize patient care activities. Audiotaped reports, face-to-face reports, or walking rounds are commonly used for nurses to pass patient information from shift to shift. Face-to-face reports and walking rounds require more time than audiotaped reports. For face-to-face and walking rounds, outgoing nurses and incoming nurses need to be present at the same time and additional communication occurs when both groups are present. Audiotape reports do not require the presence of outgoing nurses and incoming nurses simultaneously. Outgoing nurses give reports by speaking into an audiotape recorder about one hour before the end of the shift. They give reports based on their memory and notes written on self-designed worksheets. Incoming nurses listen to the audiotape reports at the beginning of the shift and take notes on their self-designed paper worksheets. Since the 1990s, audiotaped reports have become prevalent and save about 15 minutes in each shift because outgoing nurses do not need to wait for incoming nurses to give reports (Mason, 2004). However, incoming nurses spend about 30 to 60 minutes taking shift reports from the audiotape reports before starting to take care of their assigned patients. The majority of the time is spent on transcribing key information from audiotape reports to their self-designed paper worksheets. Audiotaped reports continue to limit nurses in providing care in a timely and efficient manner.

Nurses need to efficiently and effectively communicate information to provide safe, effective, and patient-centered care. When comprehensive patient information is transferred efficiently, nurses can identify patient needs, monitor patient conditions, prevent or detect complications, and implement physician orders safely and accurately. However, accessing all relevant information for patient care in the paper-based delivery system can be difficult and time-consuming. For example, when nurses need to know patient health history and health status, they need to find the patient's paper medical records, which could be misplaced or in use by other healthcare providers. When nurses need to know the results of a patient's most recent laboratory or diagnostic tests that are stored in the hospital's mainframe system, they need to go to a nursing station to log in to the mainframe to obtain the information. When nurses need to give unfamiliar medications, they need to look up the information in a drug reference, which could be misplaced, in use by other nurses, or outdated. If nurses give medications without accurate knowledge of drug information, such as safe dosage, rate of administration, drug interactions, and side effects, medication errors may occur. Thus, paper-based information systems are fraught with inefficiencies that can compromise patient care. Specifically, if nurses do not have pertinent information, they may not detect or prevent complications due to medications, procedures, or treatments or may not provide adequate patient education to help patients care for themselves.

The Institute of Medicine (2001) asserted that information technology (IT) must be used in the 21st century to improve the quality of healthcare. The American Academy of Nursing Technology and Workforce urged the use of IT to support nurses' work and to eliminate waste and redundancy (Sensimeier, Raiford, Taylor, & Weaver, 2002). President Bush announced that electronic medical records (EMR) would be available for residents in the United States in 10 years

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