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DEFINING, EVALUATING, AND IMPROVING THE PROCESS OF VERIFYING PATIENT IDENTIFIERS

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Document Type

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Degree Name

Doctor of Philosophy (PhD)

Degree Program

Computer Science

Year Degree Awarded

Summer 2014

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Keywords

Patient identification, medication administration, medication error

Subject Categories

Industrial Engineering | Software Engineering

Abstract

Patient identification errors are a major cause of medication errors. During medication administration, failure to identify patients correctly can lead to patients receiving incorrect medications, perhaps resulting in adverse drug events and even death. Most medication error studies to date have focused on reporting patient misidentification statistics from case studies, on classifying types of patient identification errors, or on evaluating the impact of technology on the patient identification process, but few have proposed specific strategies or guidelines to decrease patient

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identification errors. This thesis aims to improve the verification of patient identifiers (VPI) process by making three key contributions to the patient identification literature. First, to better understand the VPI process, we extended and formalized the requirements for VPI based on the Joint Commission's national patient safety guidelines. We showed the implications of these extended guidelines by applying them to artifacts typically used during medication administration (e.g., patient's statements about their identity, patient's identification band, medication label, and medication order). We found that nurses must choose from a considerable number of alternatives to comply with the extended guidelines. The alternatives vary depending on whether an artifact can be trusted prior to the start of the VPI process (from 16 to 8 for manual medication administration; from 8 to 1 for barcode medication administration), or what kind of information is encoded on the barcodes if the process involves barcode verification technology (from 3 to 1 when the ID band is initially considered a trusted artifact; from 8 to 3 when the ID band is not initially considered a trusted artifact). Second, we evaluated whether nurses complied with the extended VPI guidelines when administering medications, using data from clinical simulations. Nurses' compliance with the extended guidelines was low under most conditions (2% - 5% for manual medication administration; 12% - 88% for barcode medication administration). Third, we hypothesized that compliance would improve if healthcare workers were trained to follow a specific sequence of actions for VPI during medication administration (termed definitive procedure-based training), rather than their current training. We evaluated nursing students' compliance with the extended VPI guidelines using clinical simulation, with each student completing a simple task (administering one medication) and a complex task (administering two medications). We found that those students who received the definitive procedure-based training showed a significant increase in compliance on the simple task, but not on the complex task. Among the complying students, few of them followed the specific sequence of actions detailed in the definitive procedure-based training. Our findings suggest further study is needed to investigate more effective approaches for improving the VPI process, perhaps by better supporting individuals as they complete the process (e.g., appropriately designed technology) or by improving approaches to training.

Recommended Citation

Jo, Junghee, "DEFINING, EVALUATING, AND IMPROVING THE PROCESS OF VERIFYING PATIENT IDENTIFIERS" (2014). *Doctoral Dissertations 2014-current*. Paper 216.

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