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Abstract

One of the reasons for end user avoidance or rejection to use health information systems is poor alignment of the system with healthcare workflow, likely causing by system designers' lack of thorough understanding about healthcare process. Therefore, understanding the healthcare workflow is the essential first step for the design of optimal technologies that will enable care staff to complete the intended tasks faster and better. The often use of multiple or "high risk" medicines by older people in nursing homes has the potential to increase medication error rate. To facilitate the design of information systems with most potential to improve patient safety, this study aims to understand medication management process in nursing homes using business process modeling method. The paper presents study design and preliminary findings from interviewing two registered nurses, who were team leaders in two nursing homes. Although there were subtle differences in medication management between the two homes, major medication management activities were similar. Further field observation will be conducted. Based on the data collected from observations, an as-is process model for medication management will be developed.

Keywords

management, modeling, business, homes, nursing, australian, medication, process, model

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Model Medication Management Process in Australian Nursing Homes Using Business Process Modeling

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Abstract and Objective

One of the reasons for end user avoidance or rejection to use health information systems is poor alignment of the system with healthcare workflow, likely causing by system designers' lack of thorough understanding about healthcare process. Therefore, understanding the healthcare workflow is the essential first step for the design of optimal technologies that will enable care staff to complete the intended tasks faster and better. The often use of multiple or "high risk" medicines by older people in nursing homes has the potential to increase medication error rate. To facilitate the design of information systems with most potential to improve patient safety, this study aims to understand medication management process in nursing homes using business process modeling method. The paper presents study design and preliminary findings from interviewing two registered nurses, who were team leaders in two nursing homes. Although there were subtle differences in medication management between the two homes, major medication management activities were similar. Further field observation will be conducted. Based on the data collected from observations, an as-is process model for medication management will be developed.

Keywords: Workflow; process model; software engineering; medication management; nursing home

Introduction

Modeling the healthcare work process can help health information system (HIS) designers to fully understand the information needs of healthcare workers during the process of delivery of healthcare to patients and design context-appropriate HIS. Therefore, this study aims to use this technique to model medication management processes in nursing homes. The purpose is to improve safety and efficiency of medication management in nursing homes.

Methods

Business process modeling (BPM) depicts the current or future work processes in an organization. It is a conceptual modeling approach. Conceptual modeling has been widely used to model business process to facilitate the development of software that supports business process. Therefore, BPM is a promising method to model medication management processes in nursing homes to facilitate the design of HIS that can effectively assist medication management.

Based on a basic scheme proposed by Ould to conduct BPM [1], we developed our procedure for modeling medication management processes in nursing homes.

Stage 1. Semi-structured interview with two registered nurses (RNs) who were team leaders from two nursing homes was conducted. The purpose was to quickly gather information about who did what at where and when. **Stage 2.** A classification system of medication management activities will be developed based on the results from the semi-structured interview. **Stage 3.** Using the classification system, time-motion observation will be conducted to accurately record very detailed information about what is actually happening in reality. **Stage 4.** As-is process models will be developed to describe the current medication management practice. **Stage 5.** Models will be reviewed, revised and validated through interviews with participants in the observations.

Preliminary results

The results from semi-structured interview showed that the medication management process consists of medication prescription, ordering, delivery, preparation, administration and documentation. Medication prescription was conducted through 1) face-to-face meetings when a doctor came to review residents, 2) faxes and 3) phone calls. After the doctor prescribed medications and changed medication chart, a nurse faxed the medication chart to the pharmacy immediately to order the medications. When the pharmacy delivered the medications to the nursing home, a nurse checked the medications using a medication order book. If all the medications were correct, the nurse signed. For medication administration, a nurse prepared medication trolley (e.g. putting medication chart on the trolley), prepared medications (e.g. crushing a medication) and administered the medications. The nurse signed on the medication chart after medication administered.

Future work includes developing a classification system of activities to observe how nursing staff manage medications and establishing and validating the process models.

References

- [1] Ould MA. Business process management: A rigorous approach. Swindon, Wiltshire: BCS, 2005.

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