Electronic Medication Administration System Supports Safe Medication Administration

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Abstract. The purpose of this study is to describe nurses' views of what supports safe medication administration in the current electronic medication administration system. Data was collected at the turn of 2014–2015 and open-ended answers were inductively analyzed using content analysis. The system's usefulness, good usability, and the feature that there is extra information available on medications and the patient-specific information needed in medication administration are elements that support safe medication administration. The study identifies wide support for the electronic medication administration system in safe medication administration.

Keywords. Safety, medication administration, electronic medication administration system, nurse

1. Introduction

Prevention of medication errors and avoidable adverse events[1,2] is an important part of patient safety[1] and nurses' work[2]. The use of electronic medication administration system has been found to reduce the rate of medication errors in medication administration recording and their potential future risk[3].

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2. Methods

This study is part of wider electronic health record implementation research. Data was collected from special health care in one hospital district in Finland with one two-part open-ended section of the back-translated Medication Administration System - Nurses Assessment Scale (MAS-NAS) (N=855). In the open-ended section, nurses were asked to write down their comments about the current medication administration system and

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the degree to which the components of the current system enables them to administer medication safely and professionally. In this study, we report answers that described support for electronic medication administration system (eMAS) in safe medication administration. The data was collected during one month at the turn of 2014–2015. At that time, the respondents used the eMAS partly, completely, or not at all. The eMAS included an electronic home medication chart, electronic ward medication chart, and electronic prescription. Open-ended answers were analyzed inductively using content analysis.

3. Results

A total of 123 nurses answered the open-ended section; 80 of them had used eMAS partially or completely. Twenty nurses described what supports safe medication administration in the current eMAS; 15 of them reported that they had used eMAS partially or completely. Twenty-eight simplifications were formed. The eMAS elements that support safe medication are the system's usefulness to user, system's good usability, and the feature that there is extra information available in the system of medications and the patient-specific information needed in medication administration. Usefulness of the system was described as clarity of information, automated warning alerts, and continuity of medication. Good usability of the system was described as good technical quality and ease of use. Extra information available in the system was described as seeing the information needed in medication administration, such as information on medication preparation. Availability of patient-specific information needed for medication administration was described as the opportunity to read the medication list and prescriptions being in the patient record.

4. Discussion and conclusion

Nurses identified elements in the eMAS that support safe medication. Elements that support safe medication were the system's usefulness, usability, and availability of information needed for medication. Because one of the most important parts of nurses' work is to administer medication safely[2], nurses' opinions of how the system supports safe medication administration should be taken into account. The study identifies that eMAS widely supports safe medication administration. Further development of the systems should ensure that the system is useful for nurses, its usability is good, and the information needed for medication administration is available for nurses.

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