The Effect of an Electronic Medication Administration Record on Medication Administration Errors: a Quality Improvement Project

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ABSTRACT

The suspected cost of medication errors in clinical practice is an annual $1.69 billion dollars (Slight S. 2018). A thorough literature review of a total of 64 studies were reviewed. Common themes that emerged were barcodes administration errors greatly reduces medication errors, that electronic records greatly reduced the severity of adverse effects, a lack of communication between medical staff results in more errors in medication administration, and the use of an electronic record reduces workload and stress on the nurses administering the medications. As a result of this literature review, an intervention was developed utilizing the importance of electronic records on reducing medication errors that will be shared with our clinical faculty.

BACKGROUND

Every day medical professionals are making errors when giving medications to patients. There are five main types of medication errors that a medical profession can make. These errors are wrong time, wrong patient, wrong dose, wrong medication, and wrong route. The effects of a medication error on the patient can range anywhere on a continuum from no effect to death. So, it is vital the limit the amount of medication errors made by medical professionals daily.

The electronic medication administration record is an electronic record that automatically documents the “administration of medication into certified [electronic health record] technology using electronic tracking sensors” (CMS, 2012) like a barcode scanner. This electronic record serves as a legal document stating what drugs were given, at what time and by which medical professional. When using this electronic record, the medical professional must first scan the patient ID band and then the medications. By completing these steps, the system is able to alert the provider of wrong patient, wrong time, and wrong drug. This system will also alert the provider if what was scanned was not the correct dose or if the dose is not within the normal range for that drug. The system will ask the medical professional to confirm what was scanned. All these safety features of electronic medication administration record has the capability to reduce the number of errors committed by medical professionals.

OBJECTIVES

The purpose of this project is to assess primary causes or risk factors pertaining to an increased incidence of medication errors in the nursing practice and, additionally, development of an evidence-based protocol to reduce the incidence of errors from occurring.

LITERATURE REVIEW

The literature reviewed for this study consisted of 64 total studies. 14 of the studies were qualitative, 1 study was mixed method, and the remaining 41 were quantitative studies. These studies outlined several causes of medication errors, but all promoted an electronic method to reduce the amount that occurred. The hierarchy of the Evidence Grading System was used to determine the strength of the evidence presented in all these studies. This system ranks how strong a study is from category 1A to category VII based on the evidence presented in the study , and the effectiveness of the interventions presented. The evidence presented showed that using an electronic health record or medication system improved the safety of medication administration and overall improved patient health outcomes. Electronic records are becoming the new evidence-based practice guideline for the healthcare field to reduce the number of errors made regarding medications.

CAUSES

Upon researching the causes of medication errors, we found that many errors can be corrected by proper use of the electronic medical record and pyxis. We have developed an educational protocol that requires nurses to obtain recertification in using the EMR and pyxis to ensure knowledge on how to properly administer medications.

Additional causes of medication errors are negligence, lack of attentiveness, role overload, preparing the medication unsupervised, lack of communication between the nurse and physician or pharmacist, lack of education, less than 5 years’ experience, illegible orders, similar medication names, inadequate staffing, and high patient to nurse ratio.

In conclusion, we found that there are many factors that contribute to medication errors. The most common contributing factors were wrong time, unauthorized errors, omission errors, and dose errors. Our goal was to identify factors that increase the incidence of medication errors and develop interventions to prevent them from occurring. We developed an educational protocol that requires nurses to obtain recertification in using the EMR and pyxis to ensure knowledge on how to properly administer medications. In reviewing our literature review, the information we obtained informed us that using an electronic health record or medication system reduced medication errors from occurring and improved overall patient health outcomes.

For references, please see attached page.