



# Deadly Medication Errors: Can More Be Done to Prevent Them?

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## BACKGROUND/SIGNIFICANCE

Medication errors that lead to harm in adult patients is an ongoing issue in the hospital setting. If not prevented, lives are at stake, nurses may be in jeopardy of losing license, and care becomes more costly. Medication error refers to when a preventable action is done by a provider, nurse, or even a patient that causes inaccurate medication administration and leads to harm (or even death) (Billstein-Leber et al., 2018). Around 250,000 deaths a year can be blamed on medication errors (Anderson & Abrahamson, 2017). According to da Silva and Krishnamurthy (2016), over 7 million hospital patients a year are victims of medication administration errors, around 30 % of hospital patients have errors within their medication reconciliation, and the errors end up costing over \$21 billion annually (da Silva and Krishnamurthy, 2016). The current practice involves patient identification and medication checks to prevent these errors. It includes safeguards within medication dispenser machines, practicing the five rights of medication administration, and verifying patient identifiers, as well as barcode identification methods. Is enough being done to prevent medication errors? Are current rules/ safe-guards (such as the five rights of medication administration and pyxis safe-guards) followed/utilized? In hospitalized adult patients (P), how effective are pyxis safeguards and the five rights of medication administration (I) compared to not using these safeguards (C) in preventing medication errors (O)?

## METHODS

This review examined prevalence of medication errors, current practice of medication administration, and ways to improve medication administration safety. For the purpose of this review, search terms included medication error, adult, patients, injury, death, pyxis, and prevention utilizing EBSCO host and CINAH databases through Vise Library Cumberland University and Google Scholar. The searches were narrowed by selecting “within the past five years” and “peer reviewed” to increase relevance and help answer the proposed PICO question. Virginia Henderson’s Nursing Needs Theory was used to guide this review. Her theory emphasizes the importance of restoring patients’ independence and focuses on basic human needs that will enable the patient to progress through hospitalization to discharge (Ahtisham & Jacoline, 2015). Some assumptions of Henderson’s Need Theory include: (1) nurses provide patients with care until they can care for themselves. (2) patients want to reach their normal health. (3) nurses are willing to devote themselves to their patients no matter what, and. (4) the mind, body, and spirit are one. When patients are unable to administer medications on their own to help meet their needs (such as in the hospital setting), they depend on nurses to safely do that for them. Meeting the goal of returning to a patient’s independence can be a great basis to further improve a nurse’s performance towards nursing care. A nurse can help meet these needs by always following related protocols and looking for ways to make medication administration safer.



## RESULTS

- da Silva and Krishnamurthy (2016) conducted a systematic review and investigated medication error prevalence in hospital, outpatient and pharmacy settings. They found over 7 million patients a year are impacted by medication errors and cost around \$21 billion annually. The review concluded that medication errors are prevalent and will continue to increase as the population increases. The authors also found communication errors occur between physicians, nurses and pharmacists and more needs to be done to prevent these errors. Humility and teamwork were also found to be necessary to help decrease medication errors.
- Anderson and Abrahamson (2017) conducted a case-controlled study that consisted of collecting data from 25 hospitals in the US that reported medication errors within four consecutive quarters. The purpose of the study was to track the reports over four quarters and see if there was a correlation between the number of reported errors and corrective measures taken after an incident. The study concluded that only 10% of medication errors are reported and only 15% of corrective actions by hospitals improved outcomes. In addition, the results showed that 48% of the errors caused injury and the other 52% could have caused injury.
- Billstein-Leber and colleagues (2018) conducted a systematic review for preventing medication errors according to the American Society of Hospital Pharmacists. The purpose of this review was to include current guidelines, potential reasons for medication errors, and potential ways to reduce medication errors. The review concluded to prevent errors required multiple recommendations including planning, selection and procurement, storage, patient admission, ordering, transcribing and reviewing, preparing, dispensing, administration monitoring, patient discharge, and evaluation. The authors found use of infusion pumps, barcode technology, accurate patient weights, and performing independent double checks as evidence-based strategies to prevent medication errors.
- Walsh (2015) in a quasi-experimental study followed the implementation of a pyxis machine in a small critical access hospital and the responses of staff to the new machines, as well as the overall number of medication errors. The overall result of this study found that there was a 40% increase in medication errors because of the pyxis’ ability to track medication errors. This led to an increase in the number of medication errors that were caught by the staff of the hospital.
- Gorgich, Barfroshan, Ghoreishi, and Yaghoobi (2015) conducted a quantitative study using questionnaires to determine the causes of medication errors and prevention strategies from the perspective of nurses and nursing students. The questionnaire was provided to 327 nurses and 62 nursing students. The results of this study showed that the most important factors effective on medication errors of nurses included fatigue due to high workload, the large number of critically ill patients, doctor’s damaged and unreadable orders and low nurse: patient ratio.

## PRACTICE IMPLICATIONS

This literature reviewed highlighted the prevalence of medication errors in adults in the hospital setting, current practices to prevent medication errors, and what more can be done to prevent future medication errors. Nurses must always report medication errors. Understanding the prevalence of medication errors may help a nurse understand the severity of the errors, the necessity to follow protocols and safeguards, and why continued research of more potential safety measures is important. Knowledge of current practices could potentially help nurses identify areas in need of improvement, where there is room for improvement, and what works. It is the responsibility of all nurses to prevent medication errors, report medication errors and to keep knowledgeable of current best practices for medication administration. In addition, knowledge of the continued need for additional research for more potential safeguards can help healthcare providers reduce risks of future medication errors.

## CONCLUSIONS

Virginia Henderson’s Theory of Needs focuses on basic needs of patients. The basic needs of the patients in hospital settings are often met using medications when those needs cannot be completed alone. This review of the literature concluded that medication errors are prevalent, they will continue to increase as the population increases, and that more needs to be done to help prevent them (da Silva & Krishnamurthy, 2016). One problem is that less than ten percent of medication errors are reported and only 15 percent of corrective actions taken by hospitals provided positive changes (Anderson & Abrahamson, 2017). The conclusion of this review found that implementation of evidence-based safeguards for medication administration can lead to a decrease in medication errors and injury, therefore, preventing future instances and more severe patient outcomes. Continued research on safer medication administration is needed.

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