# Medication Errors in Hospitals: A Nursing Perspective

**Troy Nelson and Courtney N Haun***

*Department of Healthcare Administration and Informatics Samford University, USA*

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***Corresponding author:** Courtney N Haun, Department of Healthcare Administration and Informatics Samford University, Birmingham, AL, USA

### Abstract

This article aims to dive into the issue of medication errors and highlight an approach to address the issue. 7,000-9,000 people die in the United States (U.S.) each year due to medication errors [1]. Most of the time, safeguards are in place to prevent this issue; however, errors can be overlooked or not taken as a serious matter. The consequences of a healthcare professional being associated with a medication error can be life-altering, such as in the case of *Redonda Vaught*, which we will review. A literature search was utilized for this study and is interwoven with the opinions of the authors. To 'do no harm' is a key tenet in most healthcare professions and medication errors are a direct violation of this value. Medication errors occur due to a variety of factors. However, the important question is, "What do we do about it?" This article seeks to provide context to the situation and begin to address this particular question.

**Keywords:** Nursing; Care; Healthcare; Medication errors; Facilitating Communication; Education

## Introduction

Medications play a critical role in the care of patients in the U.S. healthcare system. In the emergency department alone, 336 million drugs are administered or prescribed annually [2]. With the massive number of medications given to patients in hospitals, the potential for error is more significant. While patients also take medications in outpatient settings, the responsibility of healthcare professionals, typically nurses, is greater in hospitals where they are directly administering medicine to patients. Hospitals tend to keep accurate data on healthcare delivery metrics, and previous studies have shown that medication error rates are between 4.8-5.3% in hospitals [3]. Patients, of course, wish to receive high-quality care when at a hospital, and nurses genuinely want to provide that level of care. Medication errors go against the hopes and wishes of both groups. Outside of nurses alone, all healthcare professionals, including healthcare administrators, are tasked with decreasing medication errors within their ability.

Although we may think of ourselves as a fully developed nation with immense technological power, medication errors are still a prevalent issue. Each year 7,000-9,000 people in the U.S. die because of a medication error [1]. All medication errors are important, not just the ones that cause major harm to patients or the errors that are reported. The same mistakes that result in a medication error that did not cause substantial injury to a patient can still occur and lead to adverse effects if it is not corrected [4]. A tremendous cost is associated with caring for patients after a medication error, estimated to be over $40 billion annually [1]. Medication errors result in lower quality of patient care and decrease the morale of nurses who enter the profession to provide care to their community [5].

## Medication Errors

A medication error can originate at different stages during the continuum of care. Errors have the potential to be mitigated up to the point of administering the drug to the patient. Medication errors may occur during ordering, documenting, transcribing, dispensing, administration, and monitoring. Medication errors are most common at the ordering stage [1]. Most errors allow for sufficient time to discover that a medication error has occurred. There should be the recognition that many nurses work in a fast-paced environment like the emergency room or intensive care unit. Although that may be the case, it is essential to ensure that drug administration follows the "five rights." This includes the right drug, patient, time, dose, and route [6]. Addressing medication errors can also be done after the administration stage when violating one of the five rights. Actions to mitigate the effects of the medication error can result in a better outcome for the patient versus doing nothing.

Medication errors should be identified through one of the multiple levels that check to ensure patients receive their medications according to the five rights. The 'Swiss Cheese Model of System Error' can describe the occurrence of medication errors at some point between ordering the medication and monitoring the patient afterward [4]. Multiple safeguards are often in place to prevent medication errors, such as medication reconciliation

and communication between nurses and pharmacists [4]. Communication is key to many different activities in healthcare, and successful medication administration is one of them. Nurses and pharmacists are estimated to identify up to 70% of medication errors before they happen when they communicate effectively and pay attention to safeguards [7]. To have meaningful conversations, prioritization needs to be placed on the patient, not personal feelings.

Even if a number of safeguards are in place, this does not matter unless the safeguards are effective. In some scenarios, too many safeguards can make it difficult to take the time needed to make sure that bypassing a specific one is the best action to take. At the same time, enough safeguards must be in place to catch any dangerous medication errors. A survey of 1,800 hospitals demonstrated that approximately 40% of potentially harmful drug orders were not flagged [8]. Implementing safeguards in computerized order entry of medications leads to the need of balancing between having too many safeguards and not having enough. The best systems are adaptive enough to keep what works well in place and have the ability to modify ineffective safeguards.

## Case Study: Redonda Vaught

The case of an ex-Vanderbilt nurse, Redonda Vaught, recently made headlines as her trial approached for having a medication error that resulted in the death of her patient. Specifically, she used Vecuronium, a paralyzing agent, when she had trouble finding Versed/Midazolam. In this case, a safeguard was bypassed where this added layer of protection to prevent medication errors from happening with Vecuronium did not occur [9]. The headlines around the country stirred up many nurses with support on both sides of the argument. Redonda Vaught was convicted of homicide and patient abuse. In turn, healthcare professionals were left with differing feelings about the ruling for the nurse's trial.

With judgments on the trial outcome aside, this medication error had terrible implications for the patient and the nurse. Many medication errors result in no harm to the patient, and there may not be any consequences for the nurse who made the error [3]. In other cases, patients can be significantly impacted, leading to mortality in some scenarios. Medication errors should be taken seriously, even when there is no recognizable adverse effect on a patient. These can be some of the best times to learn how to prevent this issue from happening again without having career-altering consequences due to the error.

## Potential Solutions

Reducing medication errors would make an admirable goal for continuous quality improvement in a hospital. There would need to be implementation outcomes such as the adoption of the new practices and usage by most staff before medication errors begin to reduce and patient outcomes improve [10]. Buy-in from nurses across the hospital would be required to make an impactful difference in reducing medication errors. Once a successful solution is implemented, separating data for medication errors by departments can allow the targeting of problem areas for the most efficient use of resources. One of the best avenues for reducing medication errors would be to facilitate communication and educating nurses about potential solutions within their given organization.

**Facilitating Communication**

Driving the need for communication, many Computerized Provider Order Entry (CPOE) systems have built-in capabilities for interprofessional communication between the pharmacist and the provider ordering medications. A common example of interprofessional communication is the notes that pharmacists attach to physical copies of medication charts to assist the nurses who administer the medication [11]. These notes are similar to the alerts on the CPOE system. They are often applied to the situation and personalized to the patients. Nurses should be intentional about considering these messages when administering medications to patients. Nurses must also make sure they are engaging in effective communication with one another. During shift changes, gaps in information can easily lead to medication errors. One technique to reduce these information gaps is the Situation-Background-Assessment-Recommendation (SBAR) briefing model. This instructs nurses to address the situation, background, assessment, and recommendation when discussing the care of their patients [12]. Nurses must consider the importance of transitions of care and the implications for the patients.

**Educating about Solutions**

An ongoing discussion of new solutions and strategies needs to be communicated to nurses and all healthcare professionals involved in the patient's care journey. This can be challenging because many nurses have extremely busy schedules and a heavy responsibility load during their work shifts. A potential solution to educate nurses would be through a piecemeal approach where either the broad implications or a few key points are emphasized during one meeting. The daily team huddle is an excellent opportunity to bring up some of the solutions to addressing medication errors. These meetings are typically no longer than 15 minutes and are meant to get everyone on the same page [13]. The presentation of solutions in those meetings would need to be brief and include actionable takeaways for the nurses, such as reminding nurses to pay attention to specific patient alerts. Another format would be a mini-lecture, typically led by a manager or clinical educator, where addressing medication errors is the topic of discussion [13]. The continuous education process for nurses about solutions is tremendously important because they tend to do the administration of medications. Medication errors can be lessened when nurses adopt strategies to address the problem and take ownership of the needed changes. In other words, if the nursing team decides to become champions of reducing medication errors, positive results may come at a more rapid pace.

## Conclusion

Medication errors occur through a failing of multiple safeguards meant to prevent the issue. The ultimate preventive measure is the competency of healthcare professionals, supported by technology and other tools. We are a long way from complete reliance on automated systems that can catch all medication errors that may occur. A focus must be put on increasing the ability of nurses and other providers to identify medication errors through new strategies meant to support their practices, not replace their judgment. It will require a culture of continuous quality improvement created around addressing medication errors where the problems are identified, solutions implemented, and the results shown [14]. Nurses directly administer medications to patients and make up the majority of the healthcare workforce. Nurses in specific departments at hospitals that are able to reduce medication errors will inspire others to take up the quality improvement initiative. By taking the matter seriously and implementing communication tactics along with educational strategies, organizations have the opportunity to positively improve medication errors. Nurses have a tremendous responsibility when it comes to the care of patients, and there is a significant risk that comes along with it. When nurses take ownership of continuous quality improvement, there is meaningful change, and patients can receive better care.

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