Medication Errors

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Introduction

Healthcare facilities are a great place in which many things occur to help patients recover from injuries and illnesses. From interventions to medication administration, healthcare professionals are constantly looking out for and striving to do the best things for their patients. However, healthcare professionals are human, and mistakes do occur. One common medical error is medication errors specifically medication administration.

A medication error, according to the NURS 310 textbook, is any inappropriate medication use that occurs when a medication is in possession of healthcare professionals or patients that may or may not cause patient harm (Yoost & Crawford, 2020, p. 795). Medication errors are one of the most common medical errors and are often realized after administration by a nurse to a patient. In fact, medication administration errors occur in 2-14% of all hospitalizations which causes approximately 7,000 deaths and 1.5 injuries per year (Hammoudi et. al., 2018). With such a long sequence of events from the doctor prescribing the medication to the nurse administrating it to a patient, there are many different causes for a medication error. This paper will explain common causes of medication errors, potential solutions, and nursing accountability in prevention of medication errors in administration.

Causes

Medication errors can occur anywhere throughout the chain of events from prescribing to administration but there are common places and ways that this occurs. Typically, the largest cause of medication errors is due to poor communication between healthcare professionals on various levels such as doctors, pharmacists, or nurses about written or oral instructions. Imagine a game of telephone with about 20 people and a confusing first message. By the time that the message gets to the last person, it is usually changed so much from the original that the message is now worthless. This analogy is useful to understand how easy it is to make mistakes concerning the medication.

Specifically, to nurses, the failure to comply with the five “rights” of medication administration is a large problem with medication errors. Before administering a medication to a patient, nurses are required to review that it is the right patient, right drug, right dose, right route, and right time in addition to providing accurate documentation for its administration (Chu, 2016). For example, a nurse might think that everything is correct but upon further review, notice that one or more requirements are not fulfilled. By following these guidelines, nurses can prevent a large portion of medication errors that may occur.

Medication errors can also occur due to an overall lack of knowledge by the doctor and nurses such as negative drug interactions and dosing. Drugs are often perfect administered alone but can have devastating consequences when taken with certain others. When meeting with a doctor, an inability for a patient to describe all their prescribed medications can cause a doctor to prescribe a medication that will negatively interact with current medications. Thus, it is imperative that doctors complete a medication reconciliation to avoid these types of problems (Talebi et. al., 2018). Dosing errors by nurses are often caused by a mistake in dosage calculations. Many times, a medication will require some sort of dosing calculation before administering either by weight, by amount or by rate (for IV) (Yoost & Crawford, 2020, p. 797). It is imperative that calculations are done correctly to ensure the correct amount is given to prevent underdosing or overdosing.

It is hard to think when there are distractions at every turn. Nowhere are distractions and interruptions more apparent than in hospitals. Nurses attending to their set tasks and patients needing help all interrupt the ever crucial and delicate medication administration process. In an article by McLeod et. al. (2015), researchers mapped four situations of nurses administering medications on med pass (see *Figure 1* for an example). As shown, their movement was not linear which increases the chances of medication errors due to needing to remember what they were doing. Nurses can also make medication errors due to nursing fatigue by the end of a shift or shortcuts such as trying to use two drug

carts at once and switching between two different ways of documentation (McLeod et. a, 2015). Overall, medication administration is interrupted in many ways that prevents nurses from remembering what has and has not been done.

One final cause of medication errors is the similarities between medications. From brand and generic names to look-alike packaging, medications are often mixed up if not carefully inspected and checked. For example, bupropion and buspirone sound very close but are actually very different. Bupropion is an antidepressant and buspirone is an anxiolytic. If mixed up and administered to patients, they can cause severe problems. Also, the same medication can have differing strengths (5 mg, 10 mg, and 25 mg) and if the package is the same, nurses might just look at the name instead of making sure that they grabbed the right strength (The U.S. Food and Drug Administration, 2019).

Solutions

Medication errors are very preventable if correct safety measures are taken every step of the way. James Reason, a professor of psychology, helped to illustrate this using the swiss cheese model. According to him, mishaps (in this case medication errors) occur when proper safety measures are forgotten which allows for mistakes down the line. If this occurs at all the layers, they create a hole that will cause an incident to happen (Rosen, 2004). Thus, medication errors can be avoided by making sure that at each step in the process, clear communication occurs to catch what might have been missed by others.

Because interruptions are a large cause of medication errors, new ways strategies have been put in place to minimize distractions so that nurses can administer medications safely. One of these methods is The Sterile Cockpit approach used in aviation. The Sterile Cockpit rule prohibits nonessential conversation during taxing, takeoff and landing to avoid distractions between the pilot and co-pilot (Federwisch et. al, 2014). By mimicking the Sterile Cockpit approach in hospitals, nurses can avoid

unnecessary interruptions and distractions when preparing and administrating medications. As explained by Federwisch et. al. (2014), hospital strategies such as no interruption zones around med carts or warning signs on med rooms helped to decrease nurse interruptions which in turn decreased the amount of medication administration errors that occurred.

Technology use in the healthcare field is expanding as the world continues to grow. Technology can help prevent medication errors by using barcodes located on patients' armbands and medication packaging. At the pharmacy, every medication should have a unique barcode that gives information about the medication inside. When a nurse is ready to administer a medication, he or she would use a barcode scanner on the patient's armband and then on the medication that is to be administered. When this is done, either a correct or incorrect notice is shown to the nurse (Truitt et. al., 2016). This approach helps nurses to fix a mistake before administration to avoid a medication error.

As explained before, drug name and packaging similarities can cause a nurse to pick the wrong one if not being observant. Visual identification of medication can be improved by using tall man text for names and color coding for different medications or strengths. In 2001, the FDA began using tall man lettering on medications to help differentiate similar drug names such as buPROPion and busPIRone (FDA, 2020). In other cases, such as anesthesia, color coded syringes are helpful in identifying the correct medication to prevent problems with the patient during surgery (Merry & Anderson, 2011). While these changes are excellent visual reminders, they should not take the place of taking time to read the label and make sure it is the right medication.

Finally, bedside rounding is also a great way to avoid medication errors. Bedside rounding consists of the nurse meeting with every patient at the beginning of a shift and according to Federwisch et. al. (2014), helps to identify in a timely manner if the correct medications and IV fluids are being

administered in addition to preventing interruptions after just a few minutes. Thus, bedside rounding helps preempt two major causes of medication errors.

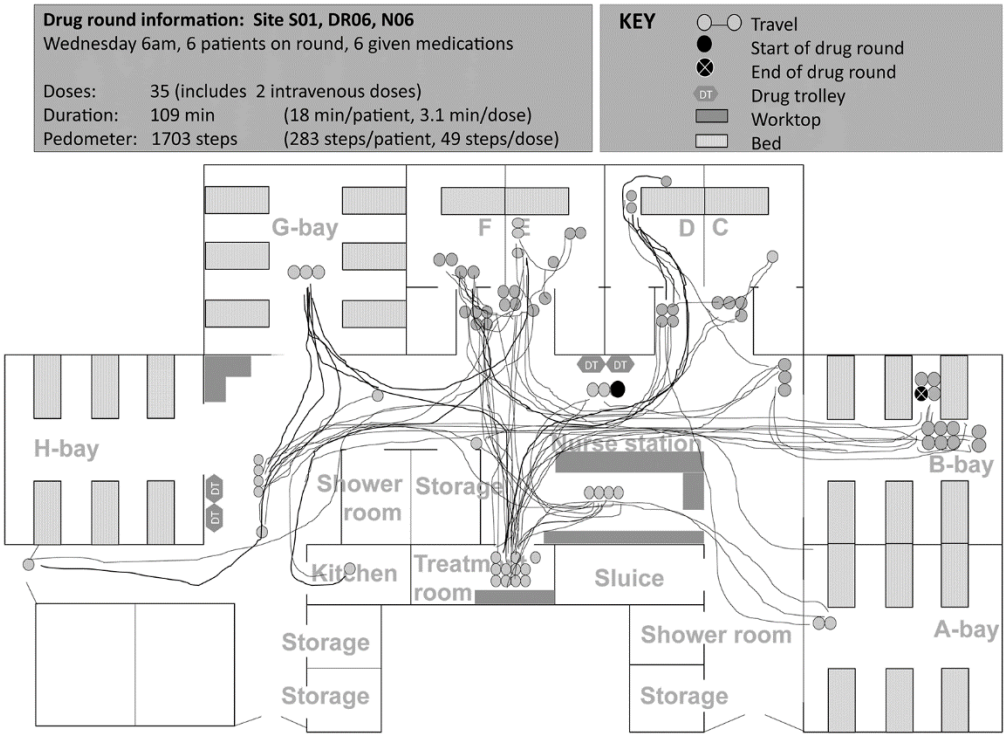
Nursing Accountability in Prevention

As the final chain in the medication link, nurses have an especially important role in preventing medication errors. Nurses need to show accountability for their actions to prevent giving the wrong medication. The most important way to show accountability is to always double check the five “rights” of medication (right patient, right drug, right dose, right route, and right time) before administering any medication to a patient. Nurses can also show accountability by never assuming anything about a drug. If a nurse ever has a question or doubt about a medication order, he or she should ask for clarification from the prescribing doctor, a pharmacist, or another nurse before administering the medication. Finally, a nurse should be accountable to the patient by clearing explaining every medication to them to ensure that they understand if they ever have any questions (How to prevent medication errors in nursing, 2019). By following these suggestions, nurses can make sure to do everything they can to prevent a medication error.

Conclusion

Mistakes do happen. However, it is the responsibility of the healthcare professionals to do all they can to prevent harm to their patients. By being vigilant, they can identify and correct inconsistencies that may have otherwise gone unnoticed and caused harm to a patient and work to reduce the prevalence of medication errors in healthcare facilities.

Figure 1


Drug round information: Site S01, DR06, N06
Wednesday 6am, 6 patients on round, 6 given medications
Doses: 35 (includes 2 intravenous doses)
Duration: 109 min (18 min/patient, 3.1 min/dose)
Pedometer: 1703 steps (283 steps/patient, 49 steps/dose)
KEY
Travel
Start of drug round
End of drug round
Drug trolley
Worktop
Bed
G-bay
F
E
D
C
H-bay
B-bay
A-bay
Nurse station
Shower room
Storage
Kitchen
Treatm room
Sluice
Shower room
Storage
Storage
Storage
DT

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