

Medication Administration Errors: Actions, Barriers and Preventions

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Abstract

Nurses play a huge role in the medication administration process. Medication administration errors have been around for a while and keep increasing in number. Communication amongst healthcare professionals helps prevent medication errors from happening. Communication increases the knowledge that patients have about their care to reduce any adverse errors that could occur. Medication administration programs, like MedEye and IndentRx, help prevent medication errors. A way to familiarize nurses with medication is to start implementing the administration process in the nursing program curriculum. There are different influential factors that can result in medication errors. The similar packaging of the medications alongside the skill set and experience nurses have could influence medication errors from happening. Other influential events would be the nurse-to-patient ratio and the number of nurses that are working on specific units. Medication administration errors are often not reported due to outside factors and personal factors. Outside factors would include nursing management responses, educational levels and the extensiveness of filling out incident reports. On the other side, personal factors would include fear of consequences, protection of pride, accountability, and reputation. Medication administration errors are on the incline, but looking at all aspects on how they occur, would help reduce them.

Medication Administration Errors: Actions, Barriers and Preventions

Background

Nurses play a critical role in providing care to patients within the hospital. Within those many roles, an important one that a nurse has to perform is medication management. Leufer and Cleary-Holdforth (2013) state “drug-prescription, -calculation, -constitution, -checking, -administration, -patient assessment, -documentation and patient medication education are just some examples of the nursing roles involved in medication management.” Registered nurses are the biggest influence on medication administration. Bucknall et al. (2018) wrote, “nurses are typically the last person in the chain of events from medication prescription to administration; therefore, they have a major role in ensuring administration patient safety during the medication administration process and in involving patients in medication safety.” On top of that, medication prescriptions are specialized for each patient in a very complex way. Nurses must pay close attention to how they are handling and giving medications to certain patients. Therefore, a major event that can happen when performing care is a medication error. Medication administration errors can be unintentional and not harmful, but still classified as a medical error.

Medication errors can be anything from wrong dosage to wrong drug name to not giving a certain medication in general. A variety of events can happen and are put under medication errors as a whole. Medication errors are not only potentially harming the patient, but it hurts the hospital. Calabrese et al. (2001) wrote, “medication errors are associated with adverse drug events that can be costly and potentially harmful, therefore it is important to study the incidence, types, and consequences of medication administration errors.” With that being said, medication errors should be closely monitored and observed.

In a study that was conducted from July to October 1999 the medication errors that were counted included “dose omission, improper dose, wrong strength/concentration, wrong drug, wrong dosage form, wrong technique, wrong route of administration, wrong rate, wrong time, and wrong patient” (Calabrese et al., 2001). Within the study that Calabrese et al. (2001) conducted, there were 851 patients observed and 187 errors detected. Drugs like vasoactive and sedative/analgesics were the top two medication drug classes for errors. They compared their study to a study that was done in France to see how they correlated. Calabrese et al. (2001) stated, “despite some of the differences in the manner of evaluation, the major types of errors found in our evaluation were similar to those reported by Tissot et al. as well as other published evaluations.” Therefore, despite the location of the hospital, medication errors continue to happen over and over again.

Medication administration errors have been more prevalent over the years. A study that was conducted from 2000 to 2012 showed that there was an upward linear trend with medication incidents. “The annual medication error rate for all callers per 10,000 U.S. population increased significantly by 69.8% from 4.98 calls in 2000 to 8.46 calls in 2012” (Brophy et al., 2014). The yearly rate has increased for every age group within the study.

A most recent study about medication errors was performed in 2022 and held in a neonatal intensive care unit. Interviews were held to discuss medication errors with four pediatricians/neonatologists and 11 intensive care unit nurses. The article states, “a total of 41 different medication errors were described by the healthcare providers” (Shawahna et al., 2022). Within those 41 medication errors, they were further categorized into three main sections: preparing/diluting/storing, while prescribing/administering, and after administering medication. This study shows that even with modernized programs, medication errors continue to happen.

Overall, nurses play an important part in dealing with medications for patients. Medication errors, shown in the studies above, continue to be relevant throughout the world and profession to this day. Medication errors started way back when drugs were starting to be brought to the public. Young (2002) state, “in 2000, 184 hospitals reported 41,296 medication-error records to USP, up from 6,224 errors reported by 56 facilities in 1999.” This statistic proves that medication errors are increasing. Although the facilities increased in 2000, the medication errors also significantly increased. In the year 2000, there were 3x the facilities than in 1999. However, the reports of medication errors went up more than 6x in 2000 compared to in 1999. Medication errors are still occurring today and trends are going up.

A Section that Identifies What is Unknown

Medication errors are steadily increasing and have become more common. One thing that is unknown to people about medication errors is how detrimental they can actually be. Most individuals do not realize how often medication errors happen on a regular basis. Another unknown topic to people about medication errors is the seriousness of the nurse-patient ratio and the nursing shortage. With nursing shortages, there is a heavier workload on the nursing that are working, which makes them more distracted. They do not realize how this can relate to medication errors. Most people do not fully understand what their medications do, how they work, and if there are any contraindications between their drugs. Drug names sound very similar and easy to pull the wrong medication due to their spelling and pronunciation.

Thesis/Problem Statement

Medication errors persist throughout the world because of improper communication and influential actions. Medication errors can be very serious and dangerous repercussions for the patients as well as the healthcare professionals and hospitals.

Research questions/statements

My research questions are provided below.

1. Does communication play a big role in medication administration and errors?
 - a. Support
2. What are ways to prevent medication errors from happening?
 - a. Support
3. What actions can influence medication errors?
 - a. Support
4. What are barriers that prevent nurses from reporting medication errors?
 - a. Support

Statement/section that summarizes the Introduction

Nurses have a huge influence on medication management due to them being the last person medication goes through before being given to the patient. Throughout the process of medication administration, many events can influence the actions performed. Medication error is an umbrella term for many different actions that happen like wrong route, wrong dosage, or wrong patient. The study that was performed in 1999 showed similarities to a study that was performed in France. They were similar because they had some of the same events that are included within the category of medication errors. The next study that was talked about that was performed between 2000 to 2012 also showed medication errors increased linearly through those

12 years. The study that was performed in 2022, this year, still provided examples of medication errors. During the various years of these studies, medication errors are still occurring in our society and will continue to happen. Therefore, I want to look into what would help prevent medication errors as well as what influences them. Medication errors are going to continue to happen in the future as shown in the trends of the statistics.

Introduction

“Medication administration is a multifactorial process that involves, doctors, nurse practitioners, pharmacists and nurses” (Stolic et al., 2022). Medication administration errors can be a result of a series of events and can happen anywhere at any time. There are many preventative ways to keep medication errors from happening. However, there are also influential factors that push medication administration errors to happen. “Medication errors could occur at any stage of the medication management process; supplying, prescribing, preparing, administering and monitoring” (Manias et al., 2021). There can be fatal medication errors or harmless ones, but they are all serious and should be reduced.

Communication in the Role of Medication Errors

Communication is a huge aspect of the healthcare profession. Patients can potentially see many doctors and other professionals when they come into the hospital. For example, if a patient has multiple things wrong with them, like pulmonary and cardiac, then there would be at least two doctors communicating with the patient due to each specialty having its own doctor to care for them. They could also be receiving therapy and medication being prescribed therefore pharmacy, respiratory therapy or physical therapy. Then if they transfer to different floors or hospitals, there are more professionals being introduced. However, not everyone communicates

with each other and is on the same page about the healthcare that is delivered to the patient. Usually, the professionals communicate with the registered nurse, as they are in the room by the patients the majority of the time. “Nurses initiated a considerable amount of communication with the medical team to ensure the correct prescription of medications for individual patients” (Bucknall et al., 2018). Therefore, the nurses are there to keep all the information organized.

There are two different types of communication interaction. There is a formal and informal structure of communication. “Formal structures of communication are predetermined and planned events, scheduled to occur at set times and require a particular process to be followed” (Manias et al., 2021). Examples of formal communication would be nurse handover/report, telephone orders, and scheduled meetings with family and doctor. A formal structure of communication is when an official chain of communication is already thought out. On the other hand, “informal structures of communication are not pre-planned, may occur at any time and do not require a particular process to be followed” (Manias et al., 2021). An example of an informal structure of communication would be bedside conversations or talking amongst coworkers, nurse to charge nurse. It is less structured and more relaxed. Both communication styles are used a lot within healthcare.

Manias et al. (2021) states, “types of communication affecting medication errors were identified for 10,944 (94.8%) medication errors.” Further broken down, the majority of communication-affected errors were health care professionals misreading or not reading medication orders. The other categories were poor informal bedside conversation and the use of incorrect prescriptions. Manias et al. (2021) states “informal bedside conversations and poor or lack of communication during clinical handover were associated with increased risk of medication harm.” Communication is significant among registered nurses, especially as they are

preparing to change shifts and must fully understand the patient that they will be caring for during the next 12 hours. This would aid in the bedside conversations that would be happening during the shift. Bedside conversations would include topics about the patient's health, questions/concerns from the patient, or updates on their care. Communication-related factors have increased the odds of medication errors.

Not only is communication important between healthcare professionals, but it is also significant between patients and families. "Past research has shown health professionals perceive that patients and families do not need to know about medication changes during hospitalizations, because it is likely that these medications may not be continued following discharge" (Manias et al., 2021). If patients and families do not fully understand the types of medications they are receiving, then bad events can happen without them knowing. They would not know what is going on with their health and within their bodies. If the family members understand the medication and what it does, then they will be more likely to help alert them if anything is going wrong, or a medication error is being performed. The patients should understand what they are getting because it is their health, and they might be able to stop something if it is different from what they are told. They need to be engaged in conversations about medications.

Another part of medication administration where communication is key is when the doctors prescribe medications to the patient. There are many incidents in which the nurse cannot correctly read the doctor's handwriting on the prescription or that the doctor or pharmacist wrote the wrong thing. "The prescription phase is highly vulnerable to the occurrence of errors" (Srinivasamurthy et al., 2021). A system was created called computerized prescriber order entry (CPOE). A study was done to compare the chemotherapy medication errors (CME) reported pre-CPOE and post-CPOE. "Our analysis showed that CPOE implementation resulted in a

significant reduction in CMEs (81%), indicating that it is a valuable strategy that can be used to reduce CMEs” (Srinivasamurthy et al., 2021). This is a significant decrease when it comes to an event as serious as medication errors. Srinivasamurthy et al. (2021) states “similarly, CPOE implementation was shown to reduce 76% of MEs (medication errors) in all hospitalized patients and by 85% in the intensive care unit patients.” This system aids in the reduction of medication errors because it eliminates handwritten prescriptions that are illegible or sloppy. It also eliminates if the doctor says one drug and the nurse does not properly hear it and then thinks it is another drug. “Conversely, use of prescribing processes with electronic systems and use of dispensing processes with electronic system were significantly associated with reduced odds of possibly or probably harmful medication errors, compared to the use of paper-based systems” (Manias et al., 2021). Communication is a significant aspect of the medication process and many events can happen when communicating among healthcare professionals.

Although electronic systems can reduce medication errors, they do not fully remove them. Events can still proceed to happen that lead to medication errors. “Nevertheless, these electronic systems were still associated with medication errors as a result of human errors relating to incorrect selection of medications from dropdown menus, or by overriding alarms in the presence of contraindicated medications or incorrect dosing” (Manias et al., 2021). Creating electronic systems to aid communication between healthcare professionals might reduce medication errors but cannot eliminate human error.

Communication is very important for the delivery of care to patients. It helps the nurses advocate for their patients and communicate all the information the patient needs to know. Communication also prevents medication administration errors. Everyone should be involved in conversations related to medical care, especially when medications are involved. Whether it is

between doctors, nurses, or pharmacists, communication is needed throughout the care.

Electronic systems would improve communication among doctors and nurses and decrease the performance of medication errors. Communication can help everyone in relation to health and medication errors. It helps the patients become more aware of their health and what kind of care they are receiving as well as the different types of medications they are taking. It helps the nurse be more familiar with the care they are going to perform as well as the medications they are going to be giving. Communication is key when trying to prevent medication errors.

Prevention of Medication Errors

With computerized systems booming, there are a few systems that were created to reduce medication errors. The computerized prescriber order entry is one of them. Another one is called MedEye. This system is a medication scanner that is at the bedside. Therefore, registered nurses would then log into the computer and open the MedEye window. It is a pill scanner in which you place the pills within the tray, and it would examine with a laser. “The MedEye scanner then scanned the medication to identify the type and quantity of medicines in the tray and cross-referenced this information with the patient’s EHR” (Tolley et al., 2022). After that, the program would notify the nurse if the medication was prescribed or not prescribed. If prescribed, then the nurse would have to accept and administer it. However, there is a downside to this system. “Any medicine(s) that was ordered using free-text, IVs and/or liquids could not be verified using the MedEye scanner and were instead recorded manually by the nurse in the MedEye user interface or separately on the hospital ePMA system” (Tolley et al., 2022). This system is strictly for oral medications as it would recognize the appearance of certain pills. The study was conducted to compare medication errors pre-MedEye and post-MedEye. “Our study suggested that the methodology was feasible and also found a slightly decreasing effect on the overall MAE rate

after the MedEye implementation” (Tolley et al., 2022). This system decreased medication errors that were performed.

IndentRx is another technological system to help prevent medication errors. It is very similar to the MedEye program but has its differences. “To ensure the correct medications are administered to the correct resident, IndentRx places the verified pills into a locked medication carrier that electronically opens only when physically brought to the patient and passed over their wristband containing a radio frequency identification tag” (Vogelsmeier et al., 2022). This program involves a patient identification wristband to help make sure that those pills match the patient and has a scanning device attached. Vogelsmeier et al. (2022) states, “for medications not in pill form (e.g., eye drops, inhalers), IndentRx also has a hand-held scanning device to allow scanning of the barcode on manufacturer packaging.” This is helpful by not manually typing in information which could result in something being wrong. In order to give the medication, it has to pass through the scanner in the medication carrier. “Verified pills are inaccessible to nursing staff until the correct resident” (Vogelsmeier et al., 2022). This is helpful and makes sure the correct pills are going to the correct patient without confusion. Another feature IndentRx has, to prevent medication errors, is once the patient ID code is scanned, the patient’s information shows up on the screen of the carrier. IndentRx has many features to potentially prevent medication errors from happening.

Another way to prevent medication errors is to start with nursing students in the nursing program. The nursing program at Thomas Jefferson University used problem-based learning (PBL) and system analysis. “To construct an operational approach to system analysis, the frameworks of Failure Mode Analysis (FMA) and Human Error Mode and Effects Analysis (HEMEA) were selected” (Papastrat and Wallace, 2003). To help prevent medication errors,

there has to be more than just theory and textbooks. More than reading out of a nursing book. “The PBL situations provide a ‘reality factor’ for students and facilitate a greater understanding of and appreciation for the links between theory and practice” (Papastrat and Wallace, 2003). However, those frameworks were not the only thing exposing nursing students. “In addition, faculty sought to create a culture for open dialogue about medication errors and to help students distinguish between the responsibility and accountability of both individual professional nurses within the health care system and the system itself” (Papastrat and Wallace, 2003). This would help familiarize the nursing students with medication administration systems and errors. It would bring medication errors to their attention and show how easy, but serious they are. It gives them a better understanding and shows them the consequences without performing the medication error and causing harm. Papastrat and Wallace (2003) states, “after using PBL as an adjunct to traditional teaching methods in the first nursing course of the baccalaureate nursing curriculum, student evaluations were overwhelmingly positive.” This structure will help the future nurses in the class be more aware when administering medications and know what can happen. In addition to these programs being integrated into the curriculum, it is still important to have clinical time in a hospital setting. “Medication administration skills require improved education, closer supervision on clinical placement, and environmental system changes to reduce medication errors by nursing students” (Stolic et al., 2022). With both things incorporated within the nursing program, the nursing students will be properly trained on how to prevent medication errors and give medications.

One helpful tool when administering medications to prevent medication errors is called the five rights. The five rights should be reviewed before each medication is given. “It is meant to ensure that the right patient receives the right drug at the right time in the right dose and by the

right route” (Martyn et al., 2019). This framework is to double-check the process of medication administration. Although medication errors can still happen, this is a checklist to run through before giving the patient the drugs. It is not a physical checklist, but rather a recollection.

Medication errors are very serious. There are many programs to help prevent medication errors from happening. It can be related to computerized systems at the bedside or exposing nursing students to it during college. “The best way to prevent errors in the health care system is to acknowledge that errors are inevitable” (Papastrat and Wallace, 2003). Although there are ways to prevent medication errors, they can still happen. “There is no ‘one size fits all’ solution in reducing medication administration errors” (Marufu et al., 2022). Prevention of medication errors is important, even if they reduce errors by a little.

Actions that Influence Medication Errors

One reason that may lead to medication administration errors is medication packaging. “Reasons for MAEs in the category medication packaging included similarities in the packaging, appearance, and names of many medications” (Hammoudi et al., 2018). Some drug names sound very similar when they are written in their generic name. The generic name is their scientific name, and the brand name is the company that produced it and what everyone knows it by. The mix between generic and brand names can lead to confusion and medication errors. The packaging that the drugs are bundled in can be puzzling as well. Some of them look similar but could be different doses or medications. Once taken out of the original package, medications can look the same. For example, many IV fluids are clear and can be confused very easily. Pills can also look similar or medications in vials that are drawn up in syringes and left on the counter. “About 1/3 of all cases of confusing medication correlate with similar packaging and labeling of drugs, at the same time 50% of all cases of confusing medication is due to poor performance of

qualified staff” (Schnoor et al., 2015). Not only does the packaging look the same, but the skill set of the registered nurses on the unit as impacts medication administration errors.

The skill set plays an important role. The registered nurses should be qualified and understand medication completely when going through the process. The experienced nurse should help get the new graduate nurses to become familiar with the medication administration process. If registered nurses aren't up to the basic skill set, then medication errors can occur by lack of knowledge. Not only does the skill set play a role, but the number of nurses versus patients on the unit can affect their performance.

The nurse-patient ratio should make sure the nurse spends a fair amount of time with all their patients but varies by unit. Schnoor et al. (2015) state “besides the LASA issue, understaffing contributes to the confusion of medication and needs to be addressed locally, though determining the right amount of staff versus just not enough seems to be a thin line.” If more patients are with a single nurse, then the workload for that individual nurse is heavier and more intense. There isn't a perfect ratio to benefit everyone in all hospitals, but there are factors that are taken into consideration. There are issues with understaffing in the nursing profession which puts strain on them. “A DBR-based health care system payment coerces employees to exert more work in the same given time” (Schnoor et al., 2015). Nurses work 12 hours shifts with lots of responsibility. Therefore, more patients lead to more tasks that need to be completed in those 12 hours. Schnoor et al, (2015) state, “this ‘rat race’ leads to more pressure at the bedside, which might favor an increase in errors in medication.” The more work that needs to be done puts a lot of pressure on the nurse. With pressure on their backs, medication administration errors can occur with a lack of focus. The nurses won't spend quality time with the patient when administering medications if they have a large checklist to complete or multiple patients’

medications to give. “An analysis of 235 CIRS case reports within the Department of Anesthesiology showed that an overload of work is the second highest factor contributing to confusing medications as per LASA definition” (Schnoor et al., 2015). Medication errors can happen if the nurse is not properly trained or if they are distracted by too many mandatory tasks.

In addition to the staffing levels for nurses, the number of patients on the unit influences medication errors. A study was performed to see how occupancy affects medication errors. “And another prior study suggested that Emergency Department Work Index (EDWIN) scores may provide some measure to quantify crowding and perhaps with higher error frequencies” (Watts et al., 2013). The more hectic the unit is, the more likely it is that a medication error will occur. An increase in patients will increase the medication error count due to the increase of chaos that comes with many different patients. Watts et al. (2013) state, “we grouped EDWIN score into low, medium, and high crowding days; and determined that the error frequency was significantly increased in the high crowding group.” The registered nurses are less likely to spend more time focusing on one patient if they have multiple to care for and give medications to at a certain time. If the unit is full, then it will create stress and nurses could slack off on some tasks that they have to perform during their shift.

There are many events that can lead to medication administration errors. “Interviews with nurses have indicated they feel pressure to complete clinical tasks within specified time periods, and in the presence of limited staffing, nurses perceived they could be distracted from their medication activities” (Manias et al., 2021). If registered nurses feel a lot of pressure, they will not be the best they can be when delivering care to their patients because their minds are thinking about everything else. Having a heavy workload and being distracted from your tasks, can result in something very serious like giving the wrong medication to the wrong patient. There should

be proper steps to follow leading up to administering medications to prevent those medication errors from occurring. Factors that are not huge still play a role in medication administration errors like the skill experience the registered nurses have.

Barriers that Prevent Reporting

Medication administration systems can potentially prevent medication errors, it can also stop registered nurses from reporting. The program that would prevent nurses from reporting errors is the reporting system for hospitals. Within the issues of incident reporting systems, there are subcategories. Those being policy and processes, standards and definitions, and burden. “The problem occurs when there is an ineffective reporting system, especially if nurses do not understand incident reporting processes when there is a lack of policies and lack of a recording system” (Vrbnjak et al., 2016). If the reporting process is complicated for the nurses to perform, then that will steer them away from reporting anything. The hospital policy needs to state what exactly needs to be done when a medication error happens and a step-by-step process. Vrbnjak et al. (2016) also state that “lack of standards for reporting and lack of clear definitions of what constitutes medication errors were also found to influence the reporting of medication errors and near misses.” The definition of medication errors is not clearly stated. Therefore, the hospital needs to have a document on what exactly a medication administration error is and what is included within this category. If errors are not explained to the registered nurses, then they will not know what to report versus what to not report. “Nurses perceived reporting processes as a burden, because of the detailed paperwork and long or cumbersome forms” (Vrbnjak et al., 2016). Nurses don’t have the extra time to fill out loads of paperwork when they should be focusing on the patient and delivering the care they need. “Nurses are more likely to report medication errors when the time needed to report the error is short and the process of reporting is

uncomplicated” (Hammoudi et al., 2017). Therefore, if the reporting process is long and extensive, the nurse will opt to not report the medication error or push it off till later to focus on their patients and other important tasks. The reporting system and process have a major influence on whether or not the registered nurse reports the medication error.

Another influential part of reporting medication administration errors or not is nurse management. Management has a lot of impact on nurses. “Focusing on the individual rather than looking at the system as a potential cause of error was identified as one of the most important aspects of management behavior that affected nurses’ disclosure of medication errors” (Vrbnjak et al., 2016). Rather than looking at the medication error as an individual human error, look at it as a systematic error and look where the system could have failed the nurse. If the management is going to blame the nurse for everything, then nurses will end up not reporting them. Another study by Ali et al. (2021) states “another important barrier to ME reporting is administrative action, with nearly all the respondents’ comments revolving around administrators’ focus on individual factors rather than systemic defects as potential ME causes.” The response from the management of a medication administration error also plays a factor in if the nurse reports. Vrbnjak et al. (2016) states, “a lack of feedback, negative feedback or no positive feedback were also seen as deterrents towards reporting.” The management should push the nurse to learn from their mistake and give them helpful feedback to grow in their field. If the administrators are going to be negative towards the nurses, then they will steer away from reporting for fear of the negative connotations. While looking at the negatives might be helpful, looking at the positive aspects of the situation may prevent further medication errors from happening. Management has a lot of control and impact on if the nurse feels safe to report a medication administration error.

“Reporting of medication errors could be associated with nurses’ education level and their training” (Vrbnjak et al.,2016). The nurse having more educational background can show them that reporting an error is the right thing to do. They want to be a leader and the first step is holding yourself accountable for the job. If they are trained on how to report a medication administration error, then that would make new graduate nurses more comfortable with reporting. The experience the registered has under their belt plays a role too. Vrbnjak et al. (2016) states “those with longer post entry level experience were more competent in completing incident forms.” Not only do they have more experience with medication administration errors, but they have more familiarity with medication and incident reports. It is easier for competent nurses to report medication administration errors. The higher the position is, the more likely that nurse is going to report a medication administration error.

Not only are there outside barriers in reporting but there are also personal barriers. “Fear of punishment was ranked as the highest concern in the reporting of MEs” (Ali et al., 2021). Many nurses fear their reputations being destroyed or look at as incompetent nurses. Fear is a big emotion to influence big decisions. “The most cited factor is fear of consequences including the loss of a job or professional license and disciplinary action” (Hammoudi et al., 2017). There is a fear of adverse consequences coming to them after they report the medication administration error.

Another personal barrier would be accountability. Vrbnjak et al. (2016) states, “barriers to reporting included negligence, attitude, personality and compliance, concerns related taking medical responsibility or unwillingness to accept the responsibility of the error.” Registered nurses have to take the step of taking responsibility for committing the medication administration error and realize that it did happen. Many don’t want to set aside their pride and take

accountability. Nurses can make excuses for the actions they performed such as not being harmful enough to report or don't agree with what the error was. Personal obstacles can prevent a registered nurse from reporting medication errors just as much as environmental barriers.

There are many reasons why registered nurses don't report their medication administration errors. "Due to work pressure, nurses did not perceive that they had enough time to report or even forgot to report some medication errors" (Vrbnjak et al., 2016). Helpful tips and tricks will increase the willingness to report errors, but nurses must feel comfortable with their environment and responsibilities to fill out an incident report. "With the help of computer technology and medication databases, that may eliminate most obvious errors with the indications of harmful medication effects" (Watts et al., 2013).

Conclusion

There are many statistics that prove medication errors are on the rise. Medication administration errors are a very serious matter. Medication errors can include many events throughout the process of medication administration, whether that's prescribing, dosage, route or pertaining to the patient.

Communication is an important factor when it comes to the medication process, whether that's informal or formal structured. Conversations among healthcare professions is critical for the recovery of patients. All the professions go to the registered nurse to discuss medication care because they are with the patient most of the time. Some doctors don't talk amongst themselves; therefore, the nurse must make sure everyone is on the same page and advocate for their patients to prevent those medication errors. Medication errors can happen if there is an adverse interaction between a few medications the patient is on. The disclosure of the medication list to

the patient that is receiving is significant as well. This helps them fully understand the type of care they are receiving and could potentially stop medication errors from happening due to familiarity and knowledge. A way to improve communication between the doctor and nurse is the computerized prescriber order entry, which eliminates the illegibility that would result in a medication error. CPOE lets the doctor write the prescription through the electronic health record system. Advanced communication enhances the care being given and reduces medication errors.

Many preventative measures are taken to not allow medication administration errors to occur. A preventative measure that may help would be for the nurse to go through the five rights prior to administering the medication. Another way to prevent medication errors from happening is medication administration systems that help recognize that the correct medication is being given to the correct patient. These programs are hooked up to bedside computers therefore they are right near the patient and the nurse doesn't have to carry the medication around with her. There are many different systems like MedEye and IndentRx. Professors incorporating medication administration into the nursing program curriculum make them accustomed to them. By making them more familiar with this process, the more likely it will prevent medication administration errors and help them to pay closer attention while passing medications. Prevention of medication administration errors will help provide the best care possible.

Many influential events occur that cause medication errors, even if it is something little like the packaging of the medication. The packaging of one medication may look very similar to another medication, which could be easily confused or mistaken. Not only is the casing the same, the appearance of the medication itself may look alike. For example, the fluid color or pill shape. The skills that the nurses acquire can be a factor in what events can prompt a medication administration to occur. The nurse must develop these skills through clinical or orientation to be

a competent nurse to not allow medication administration errors to happen. If the registered nurse doesn't have these types of abilities, then many errors can occur, and the best possible care is not given. The workload and number of patients per nurse can affect how the nurse performs during their shift and what happens during that shift. The number of patients per nurse plays a role on the number of tasks they must complete by certain times throughout the day and the end of their shift.

Medication errors are often not reported. "Study from United State revealed that the main reasons for nurses do not report medication administration errors were: fear, disagreement over whether or not an error had occurred, administrative response to medication errors, and the effort in the reporting process" (Biftu et al., 2016). The process of filling out a report being long and detailed, the nurse will less likely fill one out due to it taking up too much time and effort. As well as if the process of reporting is too confusing and complicated then they will skip past that part. Nurses fear the response they will get from the nursing management if they report a medication error. Rather than looking at the nurse for the error and giving negative feedback, the nursing management should help them grow from the error and look at how the system failed the nurse. If they look at all the different aspects of this medication administration error then the registered nurses would be more apt to report medication errors when they perform them. Personal barriers like pride and accountability get in the way as well. Nurses don't feel they did anything wrong and won't take ownership of the errors they performed due to their reputation or pride. There are many barriers, personal or environmental, that prevent the action of reporting medication errors.

Medication errors can be relevant to all professions involved in the care of patients. Professions within healthcare that it could relate to doctors, pharmacists, respiratory therapists,

etc. Respiratory therapists give medications relating to nebulizers and the respiratory system. Doctors and pharmacists prescribe medications and could write the wrong dose. Professions outside the healthcare industry that could be relatable towards would be malpractice lawyers, CEO of hospitals, hospital administrations, pharmaceutical companies, etc. Lawyers are relevant due to having to defend or prosecute nurses that made these medication administration errors. Hospital administration would have to take action relating to these medication errors, therefore, have to be familiar with them and how to prevent them. Medication errors would affect the reputation of the hospital, hurting them and making them lose money. This is relevant to pharmaceutical companies by the way they package and make these medications and how changing them might help reduce medication errors. Medication errors are very serious and are relevant to many different professions within and out of the healthcare system.

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