Medication Errors Research Paper

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Abstract

The most frequent medication administration error has to do with time. This medication error research paper will discuss time, as one of the six rights of medication administration, to be a major discrepancy worldwide. Timing is everything when it comes to medications. Certain medications are time specific. If the scheduled administration time of the medications is not acknowledged, the results could end in patient death. The time of administration plays an important role in each patient receiving a medication. If the prescribed sequence of operations is not performed by the correct method, consequences may turn out disastrous for the patient and for the health care facility. This paper will go in depth about the thirty-minute rule regarding drug administration, reasons for time errors, and recommendations to resolve timing errors in health care settings.
Medication Errors Research Paper

Imagine, a busy hospital setting, mimicking a bee’s hive nest, with health care professionals rushing around in different routes every which direction, just as bees would fly back and forth repeatedly to each destination. In the hospital, piercing overhead voices make announcements that are unavoidable, uncontrollable buzzers beep incessantly to alarm a health care expert, and loud I.V. poles clank through the hallways as eager patients roam the hallways to regain strength to prepare for discharge off of the unit. In the midst of the chaos lies a patient trying to cope with stabbing pain in his abdomen. He is curled into a little ball with his knees tucked into his chest and laying on the right side while using his right arm as a pillow, known as the fetal position. He is trying to calm himself down as tremendous amounts of horrific pain begin to break through without any warning. The patient does not want to be a burden on the nurses because he knows they are busy with other sick patients. He can hear various voices and turmoil happening outside the room in the boisterous hallway. Also, the patient cannot decide if he should call the nurse for pain relief because he recently received two pain pills within the past hour.

On the unit of the suffering patient, a nursing assistant checks the silent patient during the frequent four-hour vital sign rounds. The vital signs that are checked include: an oral temperature, a radial pulse, an upper arm blood pressure, a respiratory rate, and an oxygenation status with a probe on a warm finger. The patient verbally communicates the level of pain to the nursing assistant. As he begins to finally verbalize his pain, tears begin to trickle down his cheeks as the choppy words escape from his mouth. He begins to turn pale and clenches his eyes closed because he is not able to speak another word as the pain takes over his body and mind.
The nursing assistant places the patient call light within his reach, and exits the room to search for the nurse assigned to the agonizing patient.

The nursing assistant reports off to the nurse about the patient’s pain level, skin color, and vital sign status. The nursing assistant is concerned about the patient’s blood pressure being abnormally low, and about his emotional state about the situation. Immediately, the nurse looks into the patient’s electronic medication record to research what pain medications are available to assist the patient with his breakthrough pain, to aid with his blood pressure drop, and to allow the patient to find ease and comfort. As the nurse is conducting her research, she notices the patient had received the greatest amount of ordered pain medication according to the electronic medication record. She also notices that while she was on a lunch break, another nurse on the unit answered the patient’s call light requesting for pain medication. The patient’s electronic medication record allowed the patient to receive pain medicine every four hours. Because it had been three and a half hours, the covering nurse gave the patient his pain medicine thirty minutes early, as allowed by the facility’s thirty-minute medication rule, and documented everything correctly. While the patient’s assigned nurse is finishing her research, she realizes that the previous administration of the pain medicine, before she went on lunch break, was thirty minutes after the scheduled time. In other words, the patient’s assigned nurse gave the pain medication thirty minutes late, and the covering nurse administered the pain medication thirty minutes early. The patient received the pain medicine within a time frame of three hours, instead of the scheduled four hours. This was problematic because the patient’s weight was well below the limit for the total amount of pain medication administered in three hours. His body started to react to the overdose amount of medicine in his bloodstream with a negative feedback loop. The negative feedback loop started a downward spiral with a dramatic drop in his blood pressure. No
matter how high the pain level escalated, the nurse could not administer anything else for pain for another four hours to abide by the prescribed medication order and because it could cause his blood pressure to drop further. The patient’s assigned nurse quickly summoned the unit’s charge nurse. Also, the nurse notified the attending physician because the patient’s electronic medication record did not have anything prescribed for any instability with blood pressures. A new plan had to be implemented into action for the patient’s pain control and a solution had to be figured out before the patient’s blood pressure decreased any further. All in all, the time error caused a lot of unnecessary pain for the patient and extra work for those involved in his care.

As the story illustrates, medication errors are serious concerns for both the health care personnel and for the clients, no matter the significance of the outcome. A medication error has been defined as a dose of medication administered in a different way than as ordered on the patient’s medical record (Barker, Bates, Flynn, Mikeal, & Pepper, 2002). Medication errors are common, occurring nearly one out of five doses given in a hospital and in a skilled nursing facility with licensed practitioners (Barker et al., 2002). In the previous scenario, the time error did not end up being fatal, but the situation was labeled as a clinically substantial error that produced patient harm. Other medication administration time errors have resulted in the significant increase in morbidity and mortality for patients of all ages and sizes. Out of all medication errors, it has been estimated that seven percent are potentially harmful, totaling out to be above forty potentially harmful errors per day in a typical 300-bed inpatient facility (Barker et al., 2002).

Health care facilities have paid for medication errors in fines, or have been forced to abort all operations and no longer conduct business. In 2002, thirty-six facilities were observed, across the United States, for a medical error research study (Barker, Bates, Flynn, Mikeal, &
Researchers directly observed many medical errors happening while they closely inspected the health care professionals swiftly interact with clients. The researchers noted medical errors occurring with wrong time administration, complete omission of medications, wrong medication doses, and unauthorized drug administrations. In 2002, Barker et al. concluded the most frequent error by category was the wrong time of medication administration, ranking at forty three percent. A United Kingdom study looked at how nurses administered oral medications to 679 patients in eastern England, and found that about three out of every four medication errors were time errors with the drug administration happening more than one hour earlier or later than ordered (NHS Choices, 2011).

One major factor governing the timing of medication administration, in some facilities, is the thirty-minute rule. In 2002, Barker, Bates, Flynn, Mikeal, and Pepper considered time administration to be an error when the administration of any dose of medication was more than sixty minutes before or after the scheduled administration time. However, a thirty-minute administration window was allowed for medications that were ordered immediately before, with, or after a meal. Another research article by Barker and Flynn (1999), stated:

Wrong time errors are typically defined as the administration of a dose more than thirty minutes (or sixty minutes depending on the site) before or after the scheduled administration time, unless there is an acceptable reason. Acceptable reasons include situations where the physician has ordered that the patient not consume anything by mouth (NPO), or when the patient is off the floor at a diagnostic test or in surgery. The hospital’s standardized dose administration schedule should be used to determine the time at which a regularly scheduled dose should be given. The schedule programmed into
the pharmacy’s computer system can be used to define correct administration times, but input from the nurse and patient preference should be accommodated. (pp.2)

Adhering to the thirty-minute rule is especially important when dealing with certain time sensitive drugs. For example, the Joint Commission has emphasized timely administration of antibiotics in the treatment of diseases such as pneumonia (Aretha, Karanikolas, Karga, Kiekkas, & Lemonidou, 2011). However, not all medications are that time sensitive and the thirty-minute rule can become a hassle.

In nursing school, nurses are trained to assess each patient and use their clinical judgments before any drug administrations occur. Nurses are also taught to prioritize their work based on patient needs, rather than follow a thirty-minute administration rule to ensure the company they work for receives payment. In fact, the thirty-minute rule originated before insurance companies decided to mandate a strict time standard for all scheduled medications (Gecsedi, 2008). This rule was implemented by the Center for Medicare and Medicaid Services (CMS) for medication administration policies worldwide as a patient safety measure (Gecsedi, 2008). However, the Centers for Medicare and Medicaid Services (CMS) make the thirty-minute rule a requirement for hospitals and other health care facilities to comply with in order to receive payments from Medicare and Medicaid (Merion Matters, 2010). As a result, one-third of the nurses in the ISMP survey confessed documenting medication administration at the scheduled time, but in reality administrated medications earlier or later than the ordered time to avoid corrective actions (Merion Matters, 2010). Furthermore, according to a survey conducted by the Institute for Safe Medication Practices (ISMP), 17,500 bedside nurses responded in agreement that the thirty-minute rule was viewed as unrealistic, impractical, unsafe, and virtually impossible to follow from a clinical perspective (2010). Multiple reasons for noncompliance
with the thirty-minute rule included: medications not available on time for administration; interruptions and delays during medication administration; unsafe healthcare staffing levels; time-consuming gathering, preparation, and documentation of medications; and drug administration schedules that do not match patient care needs or nursing workflow (Merion Matters, 2010). The more pressure placed on nurses by administration medication time restrictions, the less nurses are able to focus administration based on what is truly the therapeutic timing for the patients.

Also, nurses have reported taking shortcuts to administer medication within the required time frame to avoid disciplinary action and incident reports, resulting in actual medication errors and at-risk behaviors (Merion Matters, 2010). Some at-risk shortcuts from another survey conducted by the Institution of Safe Medication Practices (2011) included administering medications before conducting a physical assessment of the patient or checking vital signs, lab values, weight, and allergy status; not thinking critically about drug administration while rushing through verification of new orders and actual drug administration; altering drug administration schedules to avoid documenting late administration; failing to use barcode scanning to avoid documentation of late administration; and skipping important double-checks due to time constraints. The frequencies of the cited at-risk shortcuts have actually increased after the thirty-minute was put into practice (Merion Matters, 2010). The hospitals want to receive payment from insurance companies, and the health care employees want to receive payment from the hospitals. Everyone has to meet certain deadlines and requirements, but patient safety should be made a priority without consequences of a reduced paycheck. The Institute for Safe Medication Practices (2011) explained,
A one-size-fits-all, inflexible requirement to administer all scheduled medications within 30 minutes before or after their scheduled times is a precarious mandate since relatively few medications truly require exact timing of doses; thus, the rule is ill-suited for the vast majority of medications that are not time critical. (para. 3)

Severe legal implications of wrong-time medication errors also contribute to risky drug administration shortcuts. In court, nurses try to fight the wrong time medication administration errors with the argument that time errors should hold the same weight as other medical errors. Nurses say time errors should be viewed as a lighter category within medication errors because most circumstances are out of their control. For example, late medication administration happens when the pharmacy delays the delivery of medications, when patients are off of the unit at medication time, when a patient is vomiting, or when a patient has lack of an intravenous access (Stokowski, 2012).

Some facilities have tried to avoid the administration medication error all together by changing the policies regarding scheduled medication orders. These institutions change policies to have a medication scheduled at a.m., p.m., lunch, bedtime, or another general term versus assigning a specific time (Englebert, 2011). These generalized terms avoids the stress of passing medications late or too early. Also, the generalized terms allow the health care facility to avoid losing insurance money from companies such as Medicare and Medicaid. In these systems, there are no standards that require medication administration records to schedule specific times (Englebert, 2011). When no exact time is defined, the “right time” of the six patient rights becomes reliant on the patient, circumstance, and medications (Englebert, 2011).

Recommendations have been made worldwide for error prevention in the future for nurses and for all health care personnel. In 1999, Barker and Flynn researched a long history of
pharmacy medication automation features to prevent medication administration errors. Features included: comprehensiveness, focus, dispenses unit doses, signals at dosing times, label machine printed and affixed, machine identification, access control, captures dose administration, drug use information provided, and controls not easily compromised (Barker & Flynn, 1999). However, research on the effect of automated drug dispensing devices shows that medication errors have not been eliminated by technology (Barker & Flynn, 1999). If anything, technology has proven exact moments when medication errors with time occur because of the latest electronic medication administration record (eMAR). When a patient’s medical record was on paper, the health care professionals were able to chart any time on paper to follow accordance with the scheduled medication order. Technology is now able to detect and quantify all late drug administrations (Merion Matters, 2010). With a computerized system, technology can link each occurrence to a specific nurse (Merion Matters, 2010). The new technology has created a more stressful environment for any nurse passing medications, which has negatively impacted the timing. Another research study found a significant amount of medical errors occurring in the intensive care units nation wide. This survey exposed reasons why intensive care unit staff had medical errors including the heavy workload, the amount of random stress, the high levels of fatigue, recent changed drug names, written communication problems, oral communication problems, and violations of standard protocols (Preidt, 2009).

What has been learned from prior research can be implemented for new medication systems, and protect the patients from harm and misery. Nurses are able to learn from their mistakes and health care facilities can implement new technology to decrease the stress for patients and employees. Internationally, a standard for time had to be made to control and
regulate administration of medications to create a safe practice for all patients. In the mean time, nurses will do their best to keep patient safe at the bedside in the midst of all the chaos.
References


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