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Quality Improvement Activity: Timely Antibiotic in Day Surgery

On January 21, a patient scheduled for a prostatectomy was checked into the Day Surgical Unit. During the admissions assessment, it was noted that the patient has a history of allergic reactions to penicillins. In reporting this, the physician ordered levofloxacin to be hung in the Day Surgical Unit and started before the surgery was scheduled in 1 hour. The nurse responsible for hanging the levofloxacin ordered the medication from the pharmacy. The Day Surgical Unit was extremely short-staffed due to call-ins. The nurse responsible for hanging the levofloxacin also had three other preoperative patients she was responsible for preparing for surgery. With new admissions taking around 30 minutes to complete, the nurse forgot to check if the levofloxacin had arrived from the pharmacy. The anesthesiologist and surgeon came to take the patient to the OR for the prostatectomy. The anesthesiologist noticed that the levofloxacin had not been hung and started. They called the nurse responsible. She ran to get the levofloxacin. The surgery was delayed an additional two hours to infuse the antibiotic. Ultimately putting the patient at risk for a longer recovery time and increased infection risk.

Describe the scenario. In what way did the patient care or environment lack? Is this a common occurrence?

In the above scenario, a patient scheduled for a prostatectomy was not given the prescribed prophylactic antibiotics before surgery. Upon noticing this medication error, the surgery was delayed, and the patient was put at a higher risk of nosocomial infection. If the anesthesiologist had not seen this discrepancy in care, the patient could have sustained a severe surgical infection that could eventually lead to sepsis and death. Unfortunately, the environment of the Day

Surgical Unit being short-staffed and overbooked puts nurses and patients at risk for mistakes being made. The COVID-19 pandemic has impacted hospital staffing ratios globally, often producing similar error-prone environments such as this one. Fortunately, the mistake was not fatal, but similar medication errors could be. Unfortunately, medication errors are a common occurrence throughout every setting in the hospital. However, in a surgical preparation area with a vast number of patients and limited staff, there is a higher risk of making an error of omission or commission in medication administration.

What circumstances led to the occurrence?

The circumstance that directly led to the medication error was the busy Day Surgery nurse failed to prioritize care of the preoperative patient prescribed levofloxacin. Though completing more admissions is a priority, the nurse should have been certain that an already admitted patient was completely prepped for surgery before moving on to admit additional patients. While balancing a heavy patient load, it is important to practice time management in prioritizing patients' time sensitive needs and treatment plans.

In what way could you measure the frequency of the occurrence?

In order to measure the frequency of delayed or omitted antibiotics patient chart audits and medication administration record audits should be conducted. Cross-examining the time that antibiotics are scheduled in comparison to the time they were administered would yield the frequency of occurrences of late or omitted antibiotic administration. While the primary focus of frequency is the Day Surgical Unit, conducting these audits throughout the hospital system would be beneficial. Nosocomial infections are unfortunately very prevalent and often produce

very poor patient outcomes. Determining the frequency of delayed antibiotic administration and determining the root cause of this discrepancy, perhaps by interviewing nurses, is of utmost importance to protect patients from developing infections and treat present infections.

What ideas do you have for implementing interventions to address the problem?

The Day Surgical Unit and the entire hospital system should implement teaching programs and workshops to educate staff on the significance of timely antibiotic administration.

-The 7 Rights of Medication Administration should be taught and reinforced to all nursing staff. Specific focus should be directed to "right time". This should detail the specific types of medications that are particularly time-sensitive, such as antibiotics. Evidence-based practice should be reinforced in that all 7 Rights of Medication Administration should be followed every time a medication is administered. In addition, posters listing these 7 rights should be hung in the medication room and at the nurses' station as a reminder to practice them.

-The unit should host an educational workshop on timely antibiotic administration for preoperative prophylaxis should focus on evidence-based practice demonstrating that time is a determining factor in prognosis of postoperative outcomes and prevention of nosocomial infection.

- Risk management workshops should be implemented teaching preventative measures of nosocomial infections by prophylactic antibiotics could give nurses tools like time management and teamwork, implementing systems that prevent delays in antibiotic administration.

-An educational session on nosocomial infection should be implemented throughout the entire hospital system to highlight evidence-based practice in early recognition and intervention of nosocomial infections. Procedures such as hand hygiene, sterility, and time-sensitive scheduled antibiotic treatment should all be discussed.

How will you measure the efficacy of the intervention?

Frequent medication administration chart audits can be completed to measure the efficacy of the interventions put in place to improve the timely administration of antibiotics. These audits should focus on delays of antibiotic administration and the root causes. The differences in time between antibiotic scheduling and antibiotic administration should be evaluated as a direct measurement of timely antibiotic administration. In addition, hospital audits of the frequency and probable causes of nosocomial infection should be completed to measure the efficacy of the interventions regarding prevention, recognition, and early treatment.