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Therapeutic Nursing Interventions

Old Dominion University
THERAPEUTIC NURSING INTERVENTIONS

Introduction

This paper will discuss the prevalence of catheter acquired urinary tract infections (CAUTI) in Depaul Medical Center’s (DMC) 24 bed intensive care unit (ICU). The ICU consists of an eight bed neuroscience ICU and the remaining 16 beds make up the general ICU. The ICU treats an adult population with focus a on diabetes, stroke, and heart disease. According to Saint, Gaies, Fowler, Harrod, and Krein (2014), CAUTIs are one of the most common infections in the world and cause one third of all hospital acquired infections. This paper will discuss CAUTIs as clinical problems in the ICU, current practice, nursing interventions that are not in practice, and suggestions to help correct this problem.

Clinical Problem

CAUTIs are a problem in the ICU because catheters are prevalent for a variety of reasons to include monitoring strict intake and output, post operational, and medically unstable patients. The Center for Disease Control and Prevention’s (CDC) National Healthcare Safety Network (NHSN) is a healthcare-associated infection tracking system. DMC uses a manual provided by the NHSN to determine if a HAI has occurred. According to these guidelines, the overall hospital acquired infection rate for this hospital is above the target rate. For the 2014 fiscal year, the hospital infection rate was 2.09 and the target rate was 1.96 (D. Krause, personal communication, June 10, 2015).

This problem was selected to be discussed due to the fact that despite the policies and protocols in place regarding the use of catheters, CAUTIs continue to occur in the ICU. CAUTI treatment is expensive, it requires the patient to have a longer length of stay, and it increases patient morbidity (Parry, Grant, & Sestovic, 2013). Daniels, Lee and Frei (2014), suggest that
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patients with a CAUTI have higher a mortality rate of 3.9 percent compared with patients without a CAUTI at 2.0 percent. In an effort to reduce CAUTIs nationwide, The Joint Commission created CAUTI reduction as a National Patient Safety Goal (Strousse, 2015). These infections can be costly not just to the patient, but to the hospital as well. “CAUTIs account for 35-40% of all hospital acquired infections in the US and cost health care organizations $150 to $450 million to treat” (Strousse, 2015, p. 11). In 2008 reimbursement for CAUTIs stopped and in 2015, health care organizations that continue to experience CAUTIs will be penalized through Medicare payment reductions (Strousse, 2015). It is clearly in the best interest of the patient and the hospital to reduce the use of catheters and decrease the number of CAUTIs.

Current Practice

Formal mechanisms are in place at Depaul Medical Center to prevent CAUTIs including a policy, an algorithm, and a CAUTI Prevention Bundle Table. These three resources list in detail the criteria for using a catheter, alternatives to inserting a catheter, and insertion technique. Care and maintenance, necessity for removal, and education are also addressed in these resources. According to Strousse (2015), these three mechanisms are in accordance with the CDC’s CAUTI prevention guidelines. The guidelines include “appropriate use of indwelling urinary catheters, utilization of proper techniques for indwelling catheter insertion, and utilization of proper techniques for indwelling urinary catheter maintenance” (Strousse, 2015, p. 12). A crucial point of the policy states that the “catheter is inserted only when necessary, and left in place, only as long as necessary” (Catheter-associated urinary tract infection prevention, 2013, p.1). According to Conway, Pogorzelska, Larson, and Stone (2012), evidence-based CAUTI prevention guidelines focus mainly on minimizing unnecessary urinary catheter use. The best way to prevent a CAUTI is to avoid insertion of a urinary catheter.
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The first step to reducing CAUTIs is to evaluate the reasons for the catheter being used. Catheters are not inserted for nurse or patient convenience and should be removed as soon as possible. Heavy emphasis is placed on preventing the insertion of unnecessary catheters. According to Knudson (2014), “between 21 and 63 percent of urinary catheters placed in patients do not have an appropriate clinical indication” (p. 9). The hospital algorithm is a guide to whether or not a patient meets the criteria for a urinary catheter. Current practice includes performing catheter care every four hours and charting this care accordingly. However, there is the possibility that catheter care is charted without actually being performed. Chart audits are being performed but that does not prove that the practice was actually performed. It is possible that CAUTI rates are elevated in this unit because catheter care is not being completed. A nurse-driven protocol for catheter removal is another formal mechanism that requires a constant evaluation of whether or not the patient needs a catheter in place. This protocol provides the nurse with the autonomy to discontinue the catheter if it is no longer needed for patient care.

Informal mechanisms that contribute to the problem are a lack of nurses and physicians continually evaluating whether or not someone should have a catheter removed. On occasion, this is often overlooked or laziness may override the initiative to question if the patient fits the criteria to continue using a catheter. In the ICU, patients often come to the unit with a catheter either from the operating room or the emergency room. “Nearly 50% of surgical patients remain catheterized beyond 48 hours postoperatively, and in the medical population, approximately 50% of patients do not have a clear indication for indwelling urinary catheters” (Oman et al., 2012, p. 548). Rather than continue to leave the catheter in without question, it is the responsibility of the nurse to advocate for the patient and determine if there is a need for the catheter. Another informal mechanism is emptying the catheter bag before transport to tests such as radiology, x-
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ray, or ultrasound. Oman et al. (2012) suggests “expanding the education to the transport staff helped raise collective awareness of drainage bag location to reduce reflux and CAUTI risks” (p. 552). A multifaceted approach involving several disciplines of the hospital can help decrease CAUTIs.

**Nursing Interventions**

Interventions that are not currently in use include the use of a unit champion to lead and encourage staff to use evidence-based practice, the use of silver alloy and hydrogel coated catheters, and an auditing program designed to monitor the process of urinary catheter insertion once a month. The champion should be a healthcare worker who will be engaged and promote safety. According to a study by Fakih et al. (2014), the champion strives to improve patient safety and encourages the healthcare workers’ sense of accountability. This person should be someone who has the respect and recognition of coworkers and who is a promoter of change. The champion acts as a liaison between the healthcare workers and promotes best practices. This individual is responsible for staying up to date on current best practices and then disseminating the information to the staff. The champion may distribute educational materials or provide tools to help adhere to best practices. A unit champion could help bridge the gap and facilitate communication between administration and the nurses to decrease the rate of CAUTIs.

A study by Lederer, Jarvis, Thomas, and Ritter (2014) suggests that the silver alloy and hydrogel (SAH) coated urinary catheters were associated with a significant decrease in CAUTIs. The study also suggests that CAUTIs were reduced by 47 percent with the use of SAH catheters. “Although silver-coated UCs are more expensive than standard catheters, a cost-effectiveness analysis found that their use actually reduced costs, given the lower costs associated with
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Silver-coated catheters benefit the patient clinically by preventing CAUTIs and decreasing the length of stay in the hospital. Silver coated urinary catheters offer benefits to the patient and hospital that outweigh the initial cost.

Another intervention is the development of a process to randomly audit urinary insertion practices once a month. This is a process that begins with educating the staff on the correct insertion practices. Education prepares the nurse with the correct tools and education to properly insert a urinary catheter. During the random audit, if at any time there is noncompliance with the proper insertion technique, the auditing nurse will intervene to ensure best practices are being performed. According to Marra et al. (2011), this process has been found to reduce the CAUTI rate in the ICU from 7.6 per thousand catheter days to 5.0 per thousand catheter days. This process encourages nurses to be accountable for their actions as well as take pride in their work.

The CDC guidelines suggest cleaning of the meatal surface daily (Strousse, 2015). The hypothesis for a nursing intervention that I would like to test to reduce CAUTIs is to implement a buddy system while performing routine urethral meatal care. This intervention will facilitate a culture change, promote teamwork, and encourage nurses to take ownership of their actions. Although this is currently part of the policy, a buddy system will ensure that it is performed, help keep staff accountable, and prevent false charting.

Summary

CAUTIs continue to be a problem in Depaul Medical Center’s ICU despite available hospital policies and protocols. Formal and informal mechanisms are present that have both helped and hindered efforts to reduce the hospital acquired infection. Implementation of a unit champion, silver-coated urinary catheters, and a nurse audit program are three interventions that
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are supported by evidence-based practice and if introduced into practice, may reduce the number of CAUTIs in the ICU. It is hypothesized that utilizing a buddy system to perform urethral meatal care would shrink the CAUTI rate of this ICU, decrease cost, reduce length of stay, and provide the best patient outcomes.
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References


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