Preventing Catheter-Associated Urinary Tract Infections: Quality Improvement

Amanda Welker

Lakeview College of Nursing

N434: Evidence-Based Practice

Professor Katie King

06/24/2023

Preventing Catheter-Associated Urinary Tract Infections: Quality Improvement

Quality improvement is crucial to the healthcare field and utilizes data to monitor the results of interventions. It then uses those results to improve healthcare quality (QSEN Institute, 2020). Quality improvement also increases the probability of accurate results or outcomes for patients and the healthcare system. Quality improvement eliminates or reduces the likelihood of failure, poor outcomes, variations, and errors in the healthcare system by utilizing data collected from studies. Knowledge, skills, and attitudes are required to achieve quality improvement. Wisdom understands the approach toward the results, and variation and measurement are crucial (QSEN Institute, 2020).

The purpose of quality improvement of an overall concept of catheter-associated urinary tract infections (CAUTIs) is to reduce the incidence and impact of these infections through systematic and continuous efforts to improve the quality of care provided to patients with urinary catheters. The article is a quantitative quality improvement study to determine and implement interventions for preventing CAUTIs (Meddings et al., 2019). CAUTIs are one of the most common device-related infections in healthcare settings. Infection control nurses are crucial in developing and implementing strategies to improve infection prevention.

Article Summary

CAUTIs are a common and preventable healthcare-associated infection that occurs when bacteria or other microorganisms enter the urinary tract through the urinary catheter. They can lead to significant patient morbidity, increased healthcare costs, and prolonged hospital stays. Therefore, healthcare organizations and providers strive to implement strategies to prevent and reduce CAUTIs. CAUTIs continue to be challenging healthcare-associated infections to address

in many hospitals. Despite various interventions and strategies to prevent CAUTIs, their reduction remains a persistent issue (Meddings et al., 2019).

Introduction

This article is a quantitative quality improvement study to determine and implement interventions for preventing CAUTIs (Meddings et al., 2019). This article highlights the interventions for preventing CAUTIs because U.S. hospitals no longer receive additional payment for treatment of a hospital-acquired CAUTI as a comorbid diagnosis (Meddings et al., 2019). This article is related to quality improvement because it focuses on how CAUTIs can be prevented if infection prevention interventions are implemented.

Overview

CAUTIs continue to be challenging healthcare-associated infections to address in many hospitals. Despite various interventions and strategies to prevent CAUTIs, their reduction remains a persistent issue (Meddings et al., 2019). The study utilized knowledge, skills, and attitudes to implement the interventions and improve the quality of care for patients with urinary catheters (QSEN Institute, 2020). This article describes the quantitative results using CAUTI and catheter utilization outcome data. The results were that no substantial quantitative improvements occurred despite the researchers' efforts utilizing multicomponent interventions delivered by on-demand modules, live webinars, coaching calls, in-person meetings, and a 2-tiered approach to help hospitals prioritize interventions to reduce CAUTI and urinary catheter use (Meddings et al., 2019).

Quality Improvement

The article discusses that the Quality Improvement effort could be implemented in acute care, long-term acute care, and critical access settings (Meddings et al., 2019). Implementing the suggested change to prevent and reduce CAUTIs would require various resources during the pre-, intra-implementation, and post-implementation stages. The pre-implementation stage would require research and evidence, leadership support, an interdisciplinary team, education and training, data collection and baseline assessment, and resource allocation. The intra-implementation stage includes standardized protocols and guidelines, catheter-associated urinary tract infection bundles, communication and collaboration, training and support, and monitoring and feedback. Finally, the post-implementation stage includes data monitoring and analysis, quality improvement initiatives, staff education and training, resource evaluation and adjustment, and continuous support and leadership engagement.

Reducing the number of CAUTI cases can result in cost savings for the institution. CAUTIs often lead to prolonged hospital stays, additional treatments, and increased healthcare costs. By preventing CAUTIs, the institution can reduce these avoidable expenses. Fewer complications from CAUTIs may result in better reimbursement rates from payers, as hospitals with lower infection rates are often incentivized through reimbursement programs. Implementing strategies to reduce CAUTIs can demonstrate the institution's commitment to quality improvement, which may improve its reputation and attract more patients. Preventing CAUTIs contributes to improved patient outcomes and experiences. Patients who do not develop CAUTIs have a lower risk of experiencing complications, pain, or discomfort associated with urinary tract infections. Lower infection rates enhance the institution’s overall quality of care, leading to higher patient satisfaction scores.

Implementing strategies to prevent CAUTIs can positively impact nursing satisfaction. Nurses provide high-quality care and reduce harm to patients. By successfully preventing CAUTIs, nurses may experience a sense of accomplishment and fulfillment in their roles. Seeing a decrease in CAUTI cases can also reduce the burden on nurses, as they may spend less time managing complications and infections related to urinary catheters. By preventing CAUTIs, patient safety is improved. CAUTIs can lead to severe complications, such as bloodstream infections and sepsis, which can be life-threatening. Avoiding these infections enhances patient safety and reduces the risk of adverse events. Strategies aimed at CAUTI prevention often involve comprehensive care bundles that address multiple aspects of patient safety, including proper insertion techniques, maintenance protocols, and regular assessment. The implementation of strategies to prevent CAUTIs can also contribute to nursing safety. These interventions may include proper training and education for nurses on catheter insertion, maintenance, and infection prevention practices. This knowledge equips nurses with the skills to safely handle catheters, reducing their risk of exposure to pathogens. Additionally, a decrease in CAUTIs may result in fewer nurses needing to handle and manage complications associated with catheter-associated infections, reducing their occupational exposure to infectious materials.

Application to Nursing

Preventing catheter-associated urinary tract infections encounters implications in practice, education, and research. The best or preferred nursing practice for catheter-associated urinary tract infections (CAUTIs) involves a combination of preventive measures, vigilant monitoring, and prompt intervention. Nursing practices are implemented with broader infection control measures and a multidisciplinary approach involving physicians, specialists, and other healthcare professionals. Additionally, local guidelines and policies should be followed to ensure

the best practices are aligned with current evidence and recommendations specific to the healthcare setting.

Practice

Proper catheter insertion and maintenance help reduce the risk of CAUTIs. A study found that adhering to appropriate catheter insertion practices and proper maintenance reduced the incidence of CAUTIs (Saint et al., 2016). Prolonged catheterization increases the risk of CAUTIs. A systematic review demonstrated that early removal of urinary catheters significantly reduced the incidence of CAUTIs (Meddings et al., 2019). Maintaining good hygiene and infection control practices is also essential in preventing CAUTIs. Regular assessment and monitoring allow for early detection of CAUTIs. Systematic surveillance and prompt treatment of CAUTIs lead to better patient outcomes and decreased infection rates (Meddings et al., 2019). Education and training promote adherence to evidence-based practices and help prevent CAUTIs.

Education

Implementing an educational program for healthcare providers led to a significant reduction in CAUTI rates. The duration of catheterization is the most crucial factor in the development of bacteriuria. Alternative bladder drainage strategies, such as clean intermittent catheterization, must also be considered. External catheters are also a viable alternative to indwelling catheters and are recommended by the CDC (Werneburg, 2022). Ongoing education and training programs for healthcare staff are essential to enhance their knowledge and skills in catheter insertion, maintenance, removal, and infection prevention. Hospitals should ensure adequate staffing levels to provide appropriate care and support for patients requiring urinary

catheters. Hospitals should ensure the availability of necessary equipment for alternative urinary management, such as condom catheters, to reduce reliance on indwelling urinary catheters. Electronic Medical Record (EMR) documentation can facilitate the tracking and management of urinary catheters. Recording the dates of catheter insertion and removal and indications for catheter use helps monitor the duration of catheterization and prompts timely reassessment and removal. Implementing "bundles" within the EMR, including catheter insertion, management, and surveillance guidelines, can standardize care and improve adherence to best practices (Werneburg, 2022).

Research

From a nursing clinical or professional perspective, there are several priorities for further study on CAUTIs. These research areas can help advance nursing practice, improve patient outcomes, and enhance preventing and managing CAUTIs. These research areas are prevention strategies, catheter insertion, and maintenance practices, monitoring and early detection, patient-centered care, and multidisciplinary collaboration. These research priorities reflect the need to further enhance our understanding of CAUTIs and identify effective prevention and management strategies (Meddings et al., 2019).

Conclusion

In conclusion, quality improvement is essential in the health care system. Quality improvement in QSEN competencies provides evidence-based information to analyze methods and outcomes and implement changes to improve the quality of care for patients and healthcare care quality (QSEN Institute, 2020). Quality improvement in the health care system aims to reduce variations and errors and increase the probability of good outcomes utilizing current knowledge and skills (QSEN Institute, 2020). Quality improvement requires positive attitudes

and behaviors. Only when healthcare workers and nurses have positively engaged will the quality of care improve (QSEN Institute, 2020). Current knowledge, skills, and positive attitudes are needed to implement changes or new methods to improve patient's quality of care in the healthcare system. CAUTIs are a common and preventable healthcare-associated infection that occurs when bacteria or other microorganisms enter the urinary tract through the urinary catheter. They can lead to significant patient morbidity, increased healthcare costs, and prolonged hospital stays. Therefore, healthcare organizations and providers strive to implement strategies to prevent and reduce CAUTIs. CAUTIs continue to be challenging healthcare-associated infections to address in many hospitals. Despite various interventions and strategies to prevent CAUTIs, their reduction remains a persistent issue (Meddings et al., 2019).

References

Competencies | QSEN. (n.d.). QSEN. https://qsen.org/competencies/pre-licensure-ksas/#quality_improvement

Meddings, J., Manojlovich, M., Ameling, J. M., Olmsted, R. N., Rolle, A., Greene, M. I., Ratz, D., Snyder, A., & Saint, S. (2019). Quantitative Results of a National Intervention to Prevent Hospital-Acquired Catheter-Associated Urinary Tract Infection. *Annals of Internal Medicine*, *171*(7_Supplement), S38. https://doi.org/10.7326/m18-3534

Saint, S., Greene, M. I., Krein, S. L., Rogers, M. A., Ratz, D., Fowler, K. E., Edson, B. S., Watson, S. R., Meyer-Lucas, B., Masuga, M., Faulkner, K., Gould, C. V., Battles, J. B., & Fakih, M. G. (2016). A Program to Prevent Catheter-Associated Urinary Tract Infection in Acute Care. *The New England Journal of Medicine*, *374*(22), 2111–2119. https://doi.org/10.1056/nejmoa1504906

Werneburg, G. T. (2022). Catheter-Associated Urinary Tract Infections: Current Challenges and Future Prospects. *Research and Reports in Urology*, *Volume 14*, 109–133. https://doi.org/10.2147/rru.s273663