Making It Work Tip Sheet

Managing Urinary Retention and Catheterization in Intensive Care Unit Patients With Primary Neurologic Disorders

This "Making It Work" tip sheet provides additional information to help intensive care unit (ICU) team leaders implement effective strategies and achieve goals to reduce central line-associated bloodstream infections (CLABSI) and catheter-associated urinary tract infections (CAUTI) and improve safety culture at the unit level.

Issue

Specialty ICUs, such as cardiothoracic surgery, neurology, and trauma, have unique patients with diseases or problems that require specific catheter needs. Many patients with neurological conditions are cared for in medical surgical general ICUs. Many patients admitted to the ICUs with neurologic diseases also have unique comorbid conditions (e.g., obesity, labile diabetes, etc.) that increase the risk of healthcare-associated catheter-based infections. It is important to identify these high-risk patients on admission and anticipate potential problems and their potential alternatives during daily multidisciplinary rounding.

Barriers

- Lack of understanding of the unique catheter-based issues higher acuity neurocritical care patients may have
- Failure to identify and manage the comorbidities in neurologic ICU patients that can make catheter-based infections life-threatening
- Lack of adjustment to bladder scanning protocols and use of alternative devices for neurologic specific issues
- Not following the appropriate culturing or "culture of culturing" processes for evaluation of fever, especially in the paroxysmal sympathetic hyperactive neurologic ICU patient
- Minimizing the importance of increased catheter-based infections due to perception that patients have a higher acuity and problems that cannot change
- Lack of engagement of providers (intensivists, neurologic specialists) to address catheter alternatives and guideline development in high-acuity populations (e.g., aneurysmal subarachnoid hemorrhage [aSAH] or intraventricular hemorrhage [IVH] patients)

Suggested Strategies

- Establish an environment that encourages the staff to become empowered and engaged to address the unique problems that higher acuity neurologic ICU patients may have with catheter utilization and infection prevention.
- Realize that although every ICU may have patients that are higher acuity than typical, it is possible to address patient-specific problems that any ICU can manage.
- Utilize daily multidisciplinary rounding and catheter assessment discussions for catheter removal and the use of alternatives.
- Consider catheter replacement protocols for changing any catheter that was placed emergently without strict sterilization techniques. Routine catheter exchanges should not be performed.
- On admission and during multiprofessional rounds, identify and address specific issues that place aSAH, spinal cord injured, or other neurologic patients at higher risk for prolonged catheter use.
- Assess potential daily use of clean intermittent catheterization as an alternative for neurologic ICU patients, especially in patients with a neurogenic bladder.
- To meet the need for complex neurologic ICU patients, consider shortening the interval between bladder scanning and intermittent urinary catheter assessments every six hours to every four hours.
- Consider the use of silver or antibiotic-coated urinary catheters only for unique patient situations that may require long-term catheter use.
- Consider earlier timing of urinary diversion techniques for managing potential prolonged neurogenic bladder dysfunction conditions in select patients.
- Utilize the “culture of culturing” processes for fever evaluation in neurological ICU patients especially in paroxysmal sympathetic hyperactivity patients.
- Utilize real-time, multiprofessional, and multipronged approaches to identify patient specific management on high-acuity, high-risk patients in order to decrease catheter utilization (e.g., rapid response catheter assessment team – members of comprehensive unit-based safety program [CUSP] team, ICU-trained RNs, physician champions, etc.).
- Engage neurology and neurologic surgery providers in developing protocols for their unique neurologic ICU patient populations that are challenged with frequent CAUTIs.

Conversation Starters

Use Situation-Background-Assessment-Recommendation (SBAR) to bring awareness to the ICU team. A sample script is provided below.

Situation: Team, over the last 6 months, we have seen a significant increase in our indwelling urinary catheter utilization and CAUTI rates.

Background: We have new neurosurgeons employed by our institution and have had several challenging cases of aSAH patients. The concern is that our education practices for onboarding new providers as well

as education around urinary catheter alternatives and appropriate culturing processes need to be hardwired into practice.

Assessment: Based on the root-cause analysis, we determined that catheter alternatives and the aSAH specific nurse-driven protocols were not being utilized. These protocols included adjusting intermittent catheter use on aSAH patients to meet catheter utilization reduction and reducing catheter-based infections. We also determined that the neurosurgical group and the intensivists were not consistently provided access to individual catheter utilization and infection data on a real-time basis.

Recommendation: If we could reduce catheter utilization and engage the neurosurgeons in the process, we may improve outcomes and prevent several CAUTIs this year. What are your thoughts on prioritizing the work with the CUSP team, chief medical officer, and nursing champions in the unit to update a nurse-driven protocol that identified criteria to remove the urinary catheters in specific neurologic conditions?

Other recommendations include:

- Develop a neurologic condition–specific bladder scanner protocol with engagement of the neurosurgical group that requires an every-four-hour scan can on complex neuro ICU patients with the potential for neurogenic bladder dysfunction, which could prevent overdistension of the detrusor bladder musculature and worsen neurogenic dysfunction.
- Present CAUTI and catheter utilization rates to individual providers and add as part of their annual quality metrics.
- Discuss the defects analysis and CAUTI data with senior leadership, the chief medical officer (CMO), and the president of the neurosurgical group, and develop a multipronged process improvement that will be reviewed and adjusted on a quarterly basis.

Conclusion

Many strategies are available to reduce catheter utilization and CAUTI rates for ICU patients with primary neurologic disorders. The data captured should be frequently presented to the ICU teams and defect analyses incorporated into strategies to reduce catheter utilization and CAUTI rates. Although most of the strategies in this tip sheet focus on CAUTI-related issues, many can be adapted for CLABSI prevention—such as empowering and engaging staff to speak up, and utilizing daily multidisciplinary rounding and catheter assessment discussions.

Case Studies, Tools, and Resources

- The Society of Critical Care Medicine Blog Post – “Strategies for Reducing and Eliminating CLABSI and CAUTI in the Intensive Care Unit” (November 2019). https://sccm.org/Blog/November-2019/Strategies-for-Reducing-and-Eliminating-CLABSI-And. Accessed November 29, 2021.

- Tackling Hospital-Acquired Infections in a High-Acuity Neuro ICU. The Cleveland Clinic – https://consultqd.clevelandclinic.org/tackling-hospital-acquired-infections-in-a-high-acuity-neuro-icu/. Accessed November 29, 2021.

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