



# AHRQ Safety Program for Intensive Care Units: Preventing CLABSI and CAUTI

## Making It Work Tip Sheet

### Empowering Nurses To Implement Nurse-Driven Protocols for Reducing CAUTI in the ICU Setting

---

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.

#### Issues

Numerous studies have identified the effectiveness of nurse-driven indwelling urinary catheter removal protocols on reducing catheter utilization and CAUTI. A supportive culture is critical in creating an environment where nurses feel empowered to utilize protocols that result in early removal of catheters and improved patient outcomes. While many units have implemented nurse-driven protocols, often these protocols are not implemented consistently by all staff.

#### Leadership & Cultural Barriers

- Lack of clear responsibility results in confusion as to who is responsible for removing the indwelling urinary catheter.
- Use of “do not remove” orders or providers’ displays of discontent at the removal of the catheter results in confusion and potential feelings of intimidation by nursing staff that leads to continuously checking with providers about removal even in the presence of a protocol.
- Limited monitoring of the protocol by staff and leadership after implementation reduces the ability to identify and fix barriers to the process.
- Vague indications for removal within the protocol create confusion for both the provider and the nurse.
- Unit has a high turnover rate or use of travel nurses, who may not be familiar with the environment or the protocol.

#### Clinical and Resource Barriers

- Ineffective external male and female urinary catheters result in the patients not liking them. This can lead to low usage of alternatives by staff, and ultimately the indwelling catheter remains in the patient longer.
- Insufficient number of bladder scanners or lack of training for staff can hinder the ability to monitor retained urine for a larger number of patients in a unit.
- Intermittent catheterization (IMC) procedures in which volumes of <300 cc are obtained and decision is made to replace after one failed attempt to void results in indwelling catheter being reinserted too soon.



- Lack of an IMC kit with all the necessary components makes the process of intermittent catheterization more difficult and time consuming.
- Concerns regarding early removal in surgical patients because of retention due to residual effects of anesthesia may result in the clinician leaving the catheter in longer.

## Suggested Strategies

### Education & Protocol

- Provide education and use patient case studies with healthcare providers to address clinical concerns with available evidence.
- Round frequently during implementation to provide coaching and remove identified barriers.
- Design a mechanism to incorporate protocol and practices into orientation for new staff, traveling nurses, and locum providers.
- Ensure the protocol is simple and easy to follow. Consider having frontline staff participate in the development for greater buy-in, and use the feedback for continuous improvement.
- Ensure participation of urology and gynecology physician leadership in the development of the protocol.
- Include clear information in the protocol that outlines acceptable residual urine volumes, when to use a straight catheter, and how many times to perform straight catheterization prior to reinserting the indwelling catheter.

### Clinical Resources

- Determine the number of bladder scanners required within a unit based on the number of patients previously catheterized. Ensure every ICU has at least one bladder scanner.
- Work with frontline staff to evaluate the effectiveness of male and female external catheters. Once products are chosen, work to promote use and maintain sufficient supplies to meet the demand.
- Ensure the clinical areas have a structured IMC kit to help ensure that steps in the procedure are done correctly, reducing infection risk.

### Electronic Medical Record Opportunities

- Link the order to insert an indwelling urinary catheter with indications of the launch of the nurse-driven removal protocol.
- Program the electronic medical record (EMR) to send daily electronic notifications/flags to nurses with patients who have catheters to assess if they still meet indications to keep the catheter.
- Display an icon representing a catheter on the patient master list for ease of rounding and evaluation.
- Incorporate the protocol into the electronic charting system and when criteria are no longer met, an order is automatically sent to remove the device or an opt-out as needed.
- Ensure clear and easy identification, visualization, and catheter insertion date for clinicians during daily rounds to facilitate communications of catheter indications and necessity.

## Conversation Starters

### Using SBAR (Situation-Background-Assessment-Recommendation) To Bring Awareness to ICU Team

**Situation:** We worked as a unit team to reduce urinary catheter utilization. One of the strategies we used was the development of an evidence-based nurse-driven protocol for early removal. Initially we saw our utilization rates decrease, but they are going up again. I am hearing from the nurses that some of the providers are writing “do not remove” orders or have complained when a nurse has removed the catheter even when the protocol criteria was met because they feel like they are not getting an accurate urine output. I have heard about better female and male external catheters, but now all we have is the female urinal and the condom catheter, which do not work very well.

**Background:** We had a significant challenge with our CAUTI infection rates and catheter utilization. It was above the national average for our type of unit. Those six additional CAUTIs over the last year led to additional patient harm. The team got together to look at the risk factors and discussed the need to get the catheter out sooner. After reviewing the literature, we created a nurse-driven protocol for early removal.

**Assessment:** It appears that certain disciplines were not involved in the development of the nurse-driven protocol and that has made buy-in challenging. It would help if we brought it back to the team and included providers from the area of practice and urology as well as frontline workers who will be using the protocol. We also examined our IMC process and male and female alternatives for efficacy and effective output collection. The staff shared that the male device shaped like a condom did not fit many anatomy types and would fall off easily. For the female we only have the urinal designed with a lip for ease of collection. Staff shared that they had to raise the head of the bed high enough to prevent the urine from flowing back out. A lot of patients could not tolerate that maneuver, so we really don't have a great alternative for females.

**Recommendation:** Let's get selected providers including urology and gynecology together along with frontline staff to re-examine the protocol, get buy-in, and make it simpler to use. Since previous implementation was a challenge, let's look at how the EMR can assist in making it easier for everyone to do the right thing. I think we could link the insertion order to indications with the launch of the revised removal protocol. Upon launching the protocol, we can provide one-to-one coaching to the frontline nurses and address barriers right away. Once we have reviewed the literature and feedback, we can bring new alternative devices for a product trial, with potential adoption based on the results and staff experiences using the products.

What other areas around these challenges with the nurse-driven protocol need to be addressed?

## Case Studies, Tools, and Resources

- American Hospital Association. Nurse-Driven Protocol for Urinary Catheter Removal. <https://www.aha.org/case-studies/2013-03-12-nurse-driven-protocol-urinary-catheter-removal>. Accessed November 29, 2021.

- Agency for Healthcare Research and Quality. Example of a Nurse-Driven Protocol for Catheter Removal. <https://www.ahrq.gov/hai/cauti-tools/impl-guide/implementation-guide-appendix-m.html>. Accessed November 29, 2021.
- Agency for Healthcare Research and Quality. Sample Bladder Scan Policy. <https://www.ahrq.gov/hai/cauti-tools/impl-guide/implementation-guide-appendix-c.html>. Accessed November 29, 2021.
- Example of a Nurse Driven Removal Protocol: <https://www.utoledo.edu/policies/utmc/nursing/guidelines/general/pdfs/nurse-foley-driven-protocol.pdf>. Accessed November 29, 2021.

## References

1. Durant DJ. Nurse-driven protocols and the prevention of catheter-associated urinary tract infections: A systematic review. *Am J Infect Control*. 2017;45(12):1331-41. PMID: 28982611.
2. Greene LR. CAUTI prevention and urinary catheter maintenance. *American Nurse*. April 2020;15(4). <https://www.myamericannurse.com/cauti-prevention-and-urinary-catheter-maintenance/>. Accessed November 29, 2021.
3. Purvis S, Gion T, Kennedy G, et al. Catheter-associated urinary tract infection: a successful prevention effort employing a multipronged initiative at an academic medical center. *J Nurs Care Qual*. 2014;29(2):141-8. PMID: 24316667.
4. Russell JA, Leming-Lee T, Watters R. Implementation of a nurse-driven CAUTI prevention algorithm. *Nurs Clin North Am*. 2019;54(1):81-96. PMID: 30712546.
5. Timmons B, Vess J, Conner B. Nurse-driven protocol to reduce indwelling catheter dwell time: a health care improvement initiative. *J Nurs Care Qual*. 2017;32(2):104-107. PMID: 27500695.
6. Topal J, Conklin S, Camp K, et al. Prevention of nosocomial catheter-associated urinary tract infections through computerized feedback to physicians and a nurse-directed protocol. *Am J Med Qual*. 2019;34(5):430-5. PMID: 31479299.
7. Tyson AF, Campbell EF, Spangler LR, et al. Implementation of a nurse-driven protocol for catheter removal to decrease catheter-associated urinary tract infection rate in a surgical trauma ICU. *J Intensive Care Med*. 2020;35(8):738-44. PMID: 29886788.

AHRQ Pub. No. 17(22)-0019  
April 2022