

Multimodal Approach to Catheter-associated Urinary Tract Infection Reduction in the Neuro Critical Care Unit



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BACKGROUND

In 2023, the number of Catheter-Associated Urinary Tract Infections (CAUTIs) in the Neurocritical Care Unit (NCCU) began to increase, averaging approximately 2 to 3 infections per month. This upward trend raised significant concerns regarding patient safety and the quality of care provided in the unit. Recognizing the critical nature of this issue, NCCU nursing leadership, Nursing Director, Infection Control specialists, and NCCU providers collaborated to identify the root causes and develop effective strategies for reducing these infections.

SMARTER OBJECTIVE

S - Specific: Achieve a 50% reduction in the number of CAUTIs in the NCCU by the end of 2024.

M - Measurable: CAUTI rates will be monitored by the Infection Preventionist. Nursing interventions, including insertion techniques, catheter maintenance, and timely Foley removal, will be consistently tracked by the NCCU clinical preceptor, manager, supervisor, and NCCU service team.

A - Achievable: Key interventions to focus on include prioritizing early Foley catheter removal, ensuring prompt emptying of Foley bags, eliminating the reuse of pink bath basins, ensuring the use of new washcloths for patient care, continuing CHG treatments, and conducting leadership rounds with Environmental Services to review cleaning protocols and ensure compliance.

R - Relevant: CAUTI reduction is aligned with WVU Medicine's core commitment to enhancing patient safety and improving overall health outcomes.

T - Time-bound: A 50% reduction in CAUTI rates within the NCCU is targeted for completion by December 31, 2024.

E - Evaluated: Infection Preventionists will monitor CAUTI rates regularly and conduct monthly data reviews to track progress and ensure the goal is being met.

R - Revised: The goal remains achievable and relevant throughout 2024, with continuous evaluations and adjustments as needed to ensure successful implementation.

IMPROVEMENT ACTION PLAN WITH ACTIONS TAKEN

Action Plan to Address CAUTIs:

NCCU Nursing:

- **Switch the mindset and culture to prioritizing early removal of Foley catheters or not using them until absolutely necessary.**
- **Ensure foley bags are emptied before patient movement, particularly as patients frequently travel and move within the unit.**

When ruling out infection on day 7 or later:

- **Remove catheter before specimen collection to avoid testing biofilm.**
- **Assess for retention before reinserting a Foley catheter.**
- **Collect an aseptic specimen by clean catch, straight catheter, or from a new Foley if needed.**
- **Ensure proper cleaning of room surfaces each shift and provide patients with access to hand hygiene.**

Care and Maintenance:

- **Use pink basins once and replace with each daily bath.**
- **NO washcloths in sinks to prevent contamination.**
- **Continue CHG (chlorhexidine gluconate) use for infection control.**
- **Add 'external catheter' to NCCU admission order set to reduce Foley use.**
- **NCCU leadership to round with Environmental Services (EVS) to review cleaning protocols and ensure compliance.**
- **1/16/24 Addition: Beginning on January 31st, NCCU will start using fewer Foley catheters, with a greater emphasis on straight catheters or external devices. An education plan for staff is being finalized to support this change.**

NCCU Providers:

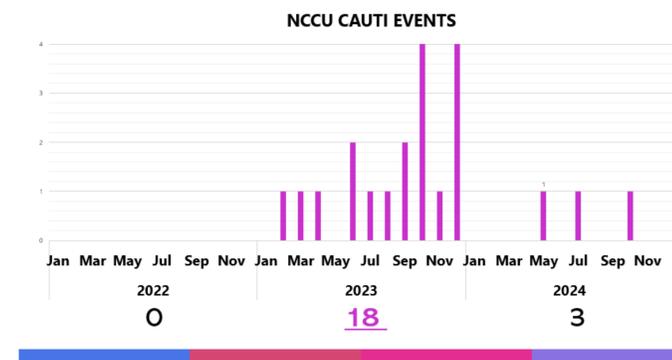
- **Provider team agrees that "less is more" when it comes to Foley use. The goal is to reduce Foley catheter use, appropriately assess and treat urinary retention, and increase the use of external catheters.**
- **The provider team is reviewing bowel regimen routines, as many CAUTI infections have been caused by E. Coli, and many patients present with liquid stool, which may increase the risk of infection.**

Providers	(GTFO) Order less foleys - Add 'external catheter' to NCCU admission order set Remove foleys earlier (possibly on admission) and assess for retention Increase use of external catheters when no retention Review bowel regimen (frequently used fecal management system and loose/ liquid stools observed and reported by staff) Discussed it is not recommended to culture on admission as to not identify asymptomatic bacteriuria and increase diagnostic stewardship
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Infection Prevention	Subject matter expert Education Support/guidance Collaborative IP rounds Surveillance Review data Report findings/trends
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RESULTS

The efforts to reduce CAUTI rates in the NCCU have already shown significant success. In 2023, there were a total of **18 CAUTIs** reported in the unit. However, following the implementation of the new action plan, the NCCU has seen a dramatic decrease in CAUTI cases. In 2024, the unit recorded only **3 CAUTIs**—a remarkable reduction in just the first few months of the year. This positive outcome reflects the effectiveness of the collaborative approach, which focused on enhancing protocols, educating staff, and improving the overall culture of care within the unit.



SCALE UP PLAN

Given the substantial reduction in CAUTI rates, this action plan has the potential to be implemented across the hospital's inpatient units. Other departments may consider adopting strategies such as early Foley catheter removal, enhancing insertion techniques, and implementing additional evidence-based practices to further decrease CAUTI rates within their respective unit.

SUSTAINABILITY PLAN

Moving forward, the NCCU team remains committed to maintaining and further improving these results. The continued focus will be on reducing Foley catheter use, enhancing staff education, and promoting best practices in catheter care. Ongoing monitoring, feedback, and collaboration between unit leadership, Infection Control, and NCCU providers will ensure that CAUTI rates continue to decline, contributing to better patient outcomes and a safer, more effective care environment.

By working together and focusing on evidence-based strategies, the NCCU is confident that the incidence of CAUTIs will continue to decrease, ensuring that patients receive the highest quality of care.

LESSONS LEARNT

The Neuroscience Critical Care Unit (NCCU) has demonstrated a higher-than-expected frequency of Foley catheter insertions, which may indicate a need for further evaluation of clinical decision-making processes and adherence to best practices. A review of current protocols and staff education on appropriate Foley catheter utilization could help ensure compliance with evidence-based guidelines while reducing the risk of catheter-associated infections and other complications.

