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Staff Education to Improve Nursing Knowledge of Catheter-Associated Urinary Tract Infection Prevention Practices

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Walden University

College of Nursing

This is to certify that the doctoral study by

Maylin Rodriguez Fernandez

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University

2026

Executive Summary: Staff Education Project
Staff Education to Improve Nursing Knowledge of Catheter-Associated Urinary Tract
Infection Prevention Practices
by
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MSN, Saint Thomas University, 2023
BSN, Antigua College International, 2016

Executive Summary Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Nursing Practice

Walden University

May 2026

Summary

In this Doctor of Nursing Practice quality improvement project, I used a staff education intervention to address nursing knowledge gaps related to catheter-associated urinary tract infection (CAUTI) prevention in a large outpatient urology clinic in the southeastern United States. Registered nurses ($N = 28$) participated in a single, 45-minute, in-person education session comprising PowerPoint slides, facilitated discussion, and printed job aids based on national guidelines. I used a single-group pre-/posttest design to evaluate the effect of the intervention. The primary outcome was staff knowledge measured using a paper-based, 17-item knowledge test administered immediately before and after the session. The secondary outcome was a participant program evaluation completed by the same nurses and analyzed descriptively to capture their perceptions of content quality, clarity, and usefulness. Knowledge scores increased from a pretest mean of 10.11 ($SD = 2.025$) to a posttest mean of 14.96 ($SD = 1.232$), with a mean change of 4.857 ($SD = 1.079$), $t(27) = 23.82$, $p < .001$, $d = 4.50$. All participants demonstrated improvement following the education session. Program evaluation ratings showed mean satisfaction, confidence, and content quality scores ranging from 4.54 to 4.57 on a 5-point scale, indicating consistently favorable participant perceptions of the training experience. The project demonstrated that a brief, standardized, nurse-led education session can be implemented efficiently in an outpatient specialty setting and produce measurable short-term gains in staff knowledge related to evidence-based CAUTI prevention. Providing equitable access to standardized nurse education supports workforce readiness and promotes safe and effective care delivery.

Background

CAUTIs represent a major safety and quality concern across care settings, including ambulatory specialty clinics. The Centers for Disease Control and Prevention (CDC; 2024) has identified indwelling urinary catheters as a leading source of health care associated infections, with preventable risk driven largely by insertion practices, maintenance procedures, and timely removal. The Agency for Healthcare Research and Quality (AHRQ; 2018) has published a CAUTI prevention toolkit that emphasizes consistent nursing knowledge regarding aseptic technique, daily necessity assessment, and standardized maintenance practices. In outpatient urology settings, nurses frequently manage catheter insertion, patient preparation, and follow-up catheter care, which places them in a critical role for preventing CAUTI (Su, 2024). Knowledge gaps at the nursing level can compromise the consistent application of these evidence-based standards even when policies and guidelines exist.

The project was implemented in a large outpatient urology clinic in the southeastern United States where registered nurses routinely support procedures involving urinary catheterization. These nurses are responsible for catheter insertion, maintenance education, and coordination of follow-up care, making them primary implementers of CAUTI prevention standards. Because nursing practice in this setting is highly protocol driven, staff education represents an appropriate and efficient strategy for reinforcing evidence-based catheter care expectations and standardizing knowledge across clinicians.

The practice gap was that inconsistent nursing knowledge regarding evidence-based CAUTI prevention practices was identified through stakeholder observation and ongoing unit level monitoring of staff practices. The purpose of the project was to improve nursing staff knowledge related to CAUTI prevention strategies. The practice focused question was: Among registered nurses in an outpatient urology clinic, does participation in a structured CAUTI prevention education session improve staff knowledge of evidence-based CAUTI prevention strategies as measured by a paper-based pre- and posttest?

Evidence supporting staff education as a strategy to improve CAUTI prevention knowledge is strong and consistent. National guidelines from the CDC (2024) and the American Nurses Association (2020) provide high-level, authoritative recommendations emphasizing nurse education, aseptic technique, daily catheter reassessment, and timely removal as core CAUTI prevention strategies. In addition, a recent systematic review by Koota et al. (2024) synthesized findings from multiple intervention studies and concluded that structured educational interventions significantly improve infection prevention knowledge and adherence among health care professionals. These sources represent high-quality evidence, including national expert consensus guidelines and systematic review-level evidence, supporting staff education as an appropriate and evidence-based approach for addressing nursing knowledge gaps related to CAUTI prevention.

Staff Education Project Development

I conducted this project in a large outpatient urology clinic in the southeastern United States. The site was masked to protect organizational identity and to meet

institutional requirements for de-identification. Registered nurses who provided direct and indirect support for urology patients and catheter-related procedures were invited to participate. A total of 28 registered nurses completed both the pre- and posttest assessments and were included in the final analysis. Participation was voluntary, and all nurses attended the same education session, which ensured consistency in exposure to the intervention and timing of the outcome measurements.

The project was reviewed and conducted in accordance with Walden University's ethics pledge for Doctor of Nursing Practice projects. I obtained site approval from the clinical setting prior to implementation, allowing the delivery of the staff education session and the use of paper-based assessment tools. No patient data were collected at any point. All questionnaires were anonymous, and unique nonidentifying codes were used solely to link pre- and posttest responses for analysis. No personal identifiers, demographic variables, or employment information were recorded, which supported participant privacy and minimized risk.

I developed the intervention following confirmation of a practice need for improved nursing knowledge related to CAUTI prevention. Stakeholder observation and unit level monitoring indicated variation in how evidence-based catheter care principles were understood and applied, which supported the selection of staff education as the primary strategy. Content for the education session was informed by national and professional guidance, including current CDC (2024) and American Nurses Association (2020) guidelines and an AHRQ (2018) CAUTI prevention toolkit used as an educational support resource. I included additional peer-reviewed CAUTI literature in the education

materials to support instructional content (see Patel et al., 2023; Su, 2024) These sources emphasize aseptic insertion, maintenance practices, daily assessment of catheter necessity, and the role of nursing staff in preventing CAUTI.

I developed learning objectives to align with these evidence-based standards and focused on defining CAUTI risk factors, identifying appropriate insertion and maintenance practices, and clarifying nursing responsibilities in catheter care. Teaching strategies included didactic content delivered through PowerPoint slides, case-based discussion, and visual job aids to reinforce key concepts. The draft educational materials and objectives were reviewed by content experts, including a unit nurse educator, an infection prevention specialist, and a CAUTI clinical champion. This review ensured that the content was accurate, relevant to the outpatient urology setting, and aligned with current practice standards.

The education was delivered as a single, live, in-person group session lasting 45 minutes. All participating nurses attended the same session. I used PowerPoint slides in the presentation to provide structured content, facilitated discussion to allow clarification and engagement, and printed job aids to summarize key CAUTI prevention practices. Immediately before the start of the session, participants completed the paper-based pretest, and immediately after the conclusion of the session, participants completed the paper-based posttest and the program evaluation form. This timing ensured that all knowledge scores reflected the same exposure period and minimized the influence of external learning sources.

Two types of data were collected. The primary data were knowledge scores obtained from the paper-based pre- and posttest. The knowledge assessment had a total possible score range of 0 to 17, with higher scores indicating greater knowledge of CAUTI prevention strategies. Each participant used a unique anonymous code to link their pre- and posttest responses. The secondary data were participant program evaluation ratings, which were collected using a Likert scale tool and summarized using composite scores. I analyzed knowledge data using a paired samples *t* test to compare pre- and posttest scores for the same participants. Program evaluation data were analyzed using descriptive statistics only, including means, medians, standard deviations, and ranges, without inferential testing.

I used a summative evaluation approach in the project. Staff knowledge was evaluated through comparison of pre- and posttest scores, which provided a direct measure of knowledge change following the education session. Program quality was evaluated through ratings completed by the registered nurses who participated in the training. These ratings captured their perceptions of satisfaction and content quality and were used to describe the acceptability and perceived educational value of the session rather than to measure behavior change, adherence, or clinical outcomes. Education materials developed for this staff education are presented in the Appendix.

Results

Primary Outcome: Knowledge

I assessed knowledge using a paper-based pretest and immediate posttest completed by 28 registered nurses. All participants provided paired observations and

were included in the analysis. Pretest scores had a mean of 10.11 with a standard deviation of 2.025 and a range of 6 to 14. Posttest scores had a mean of 14.96 with a standard deviation of 1.232 and a range of 12 to 17. The mean change in knowledge scores, calculated as posttest minus pretest, was 4.857 with a standard deviation of 1.079 and a range of 3 to 6. All participants demonstrated a positive score change. A paired samples *t* test was used to compare pre- and posttest scores. The analysis yielded $t(27) = 23.82, p < .001$, indicating a statistically significant difference between pre- and posttest knowledge scores. The reported effect size was Cohen's $d = 4.50$ with a 95% confidence interval from 3.248 to 5.747, reflecting a large standardized difference between the two time points. Descriptive and inferential knowledge results are summarized in Table 1.

Table 1

Pre- and Posttest Knowledge Scores for Registered Nurses (N = 28)

Measure	Pretest	Posttest	Change
<i>N</i>	28	28	28
<i>M</i>	10.11	14.96	4.857
<i>SD</i>	2.025	1.232	1.079
<i>Mdn</i>	10.00	15.00	5.00
Minimum	6	12	3
Maximum	14	17	6

Note. Scores represent total correct responses on a 17-item paper-based knowledge test.

Change reflects posttest minus pretest scores. Paired samples *t*-test results were $t(27) = 23.82, p < .001$, Cohen's $d = 4.50$.

Secondary Outcome: Participant Program Evaluation

Program evaluation ratings were completed by the registered nurses who participated in the education session ($N = 28$). These data are reported as a single

descriptive secondary outcome and are summarized in Table 2. The program evaluation included three descriptive dimensions: overall satisfaction, confidence (perceived clarity and usefulness of the educational content), and perceived content quality. Mean ratings for all three dimensions ranged from 4.54 to 4.57 on a 5-point scale, indicating consistently high participant ratings of the education session.

Table 2

Participant Program Evaluation Ratings (N = 28)

Scale	<i>M</i>	<i>SD</i>	<i>Mdn</i>	Min	Max
Overall satisfaction	4.564	0.347	4.607	4.00	5.00
Confidence (Perceived clarity and usefulness)	4.536	0.470	4.50	4.00	5.00
Content quality	4.565	0.319	4.50	4.00	5.00

Note. Ratings were completed by the registered nurses who participated in the education session ($N = 28$). Scores were recorded on a 5-point Likert scale, with higher values indicating more favorable ratings. These data are reported descriptively and do not represent behavioral or clinical outcomes.

Organizational and Staff Level Impact

At the organizational and staff level, I produced standardized educational materials for the project, including a CAUTI prevention PowerPoint presentation, paper-based knowledge assessment, and nursing job aids that align with national guidelines. These materials provide the project site clinic with a reproducible education package that can be integrated into onboarding, annual competencies, or targeted remediation for staff. In the project, I also established a simple, low-resource method for measuring nursing knowledge using a paper-based pre- and posttest, which is feasible in outpatient settings

without reliance on electronic systems. By standardizing educational content and evaluation methods, the project supports consistency in nursing knowledge and reinforces shared expectations for evidence-based catheter care within the clinic.

Limitations

In the project, I used a single-group pre-/posttest design without a comparison group, which limits the ability to attribute knowledge gains solely to the intervention or to rule out testing effects. Data were collected immediately following the education session, restricting evaluation to short-term knowledge change rather than long-term retention or practice behavior. The sample size of 28 registered nurses represented the available nursing staff at the project site and was adequate to detect statistically significant knowledge change; however, the relatively small, single-site sample limits generalizability. No patient outcomes, adherence measures, or system-level metrics were collected because the project was intentionally designed as an education-focused quality improvement initiative rather than a clinical outcomes evaluation.

Importance Beyond the Local Setting

Although this project was implemented in a single outpatient urology clinic, its findings are relevant to other ambulatory and specialty care settings where nurses routinely manage urinary catheters. Outpatient clinics often have limited access to formal infection prevention education compared to inpatient settings, despite ongoing exposure to CAUTI risk factors. This project demonstrates that a brief, standardized, nurse-led education session can be implemented efficiently and produce measurable improvements in staff knowledge without disrupting clinic operations. The approach and materials used

in this project may be adapted for use in other outpatient specialties, supporting broader efforts to strengthen nursing knowledge related to infection prevention and patient safety across diverse care environments.

Conclusions

The staff education quality improvement project addressed a documented practice gap in nursing knowledge related to CAUTI prevention strategies within a large outpatient urology clinic in the southeastern United States. Using a single group, pre-/posttest design, I evaluated the effect of a structured, 45-minute, in-person education session on registered nurse knowledge. Knowledge scores increased from a pretest mean of 10.11 to a posttest mean of 14.96, with a mean change of 4.857, demonstrating a statistically significant improvement following the intervention. These results indicate that a focused education session aligned with national guidelines can support short-term gains in staff knowledge related to evidence-based catheter care, which is essential for maintaining standardized educational expectations among nursing staff.

Further Recommendations

My recommendations from this project are limited to education sustainability. The PowerPoint presentation, knowledge test, and job aids developed for this project can be incorporated into routine staff education activities, including onboarding and annual competency refreshers. Periodic delivery of the education session using the same materials may help maintain staff exposure to CAUTI prevention standards and reinforce knowledge over time. Repeating the pre- and posttest process during future sessions

would allow ongoing monitoring of staff knowledge using the same paper-based measurement approach.

Implications for Nursing Practice

The project demonstrates the feasibility of using a brief, structured education session to assess and address knowledge gaps among nurses in an outpatient specialty setting. Standardizing staff education around CAUTI prevention provides a consistent reference point for nursing practice and supports alignment with national guidelines (see AHRQ, 2018; CDC, 2024). The use of a simple paper-based assessment also offers a practical method for evaluating educational outcomes without reliance on electronic systems or patient level data.

Positive Social Change and Diversity, Equity, and Inclusion

Providing all nurses with access to standardized, evidence-based education supports workforce equity by ensuring that staff have the same opportunity to acquire essential clinical knowledge regardless of role or background. Improving access to structured education promotes safer care by strengthening the knowledge foundation that underpins infection prevention practices across diverse patient populations.

References

- Agency for Healthcare Research and Quality. (2018). *Preventing catheter-associated urinary tract infections*. <https://www.ahrq.gov/hai/quality/tools/cauti-ltc/prevent.html>
- American Nurses Association. (2020). *ANA CAUTI prevention tool*. <https://www.nursingworld.org/practice-policy/work-environment/health-safety/infection-prevention/ana-cauti-prevention-tool/>
- Centers for Disease Control and Prevention. (2024). *Guidelines for the prevention of catheter-associated urinary tract infections*. <https://www.cdc.gov/infection-control/hcp/cauti/index.html>
- Koota, E., Kaartinen, J., & Melender, H. (2024). Impact of educational interventions for professionals on infection control practices to reduce healthcare-associated infections and prevent infectious diseases: A systematic review. *Collegian Journal of the Royal College of Nursing Australia*, 31(4), 218-231. <https://doi.org/10.1016/j.colegn.2024.04.006>
- Patel, P. K., Advani, S. D., Kofman, A. D., Lo, E., Maragakis, L. L., Pegues, D. A., Pettis, A. M., Saint, S., Trautner, B., Yokoe, D. S., & Meddings, J. (2023). Strategies to prevent catheter-associated urinary tract infections in acute-care hospitals: 2022 update. *Infection Control and Hospital Epidemiology*, 44(8), 1209-1231. <https://doi.org/10.1017/ice.2023.137>

Su, L. (2024). Effectiveness of nurse-driven protocols in reducing catheter-associated urinary tract infections. *Journal of Nursing Care Quality*, 40(1), 39-45.

<https://doi.org/10.1097/ncq.0000000000000811>

Appendix: Educational Materials

Preventing Catheter-Associated Urinary Tract Infections (CAUTI)

Knowledge Test: Pre-/Posttest Questionnaire

This knowledge assessment measures recognition and understanding of evidence-based CAUTI prevention principles and guideline concepts. It does not measure actual nursing performance, documentation behavior, or clinical practice.

Instructions: Please select the best answer for each question. Questions that reference documentation, reassessment, or professional roles are intended to assess knowledge of guideline expectations rather than self-reported or observed practice. Your responses will help evaluate nursing knowledge related to CAUTI prevention strategies.

1. Which of the following is a primary risk factor for developing a catheter-associated urinary tract infection (CAUTI)?
 - A. Use of sterile gloves during catheter insertion
 - B. Prolonged catheter use without medical necessity
 - C. Daily assessment of catheter necessity
 - D. Use of a closed drainage system
2. According to evidence-based guidelines, what is the recommended best practice for catheter maintenance?
 - A. Leave the catheter open to air for drying
 - B. Disconnect the system when emptying the bag
 - C. Ensure the catheter is properly secured and urine flows unobstructed
 - D. Routinely flush the catheter with normal saline

3. What is the purpose of daily reassessment of urinary catheters?
 - A. To maintain accurate intake and output records
 - B. To determine if the catheter is still medically necessary
 - C. To reduce the workload for nursing staff
 - D. To prepare for discharge planning
4. Which organization provides guidelines specific to CAUTI prevention in hospitals?
 - A. World Health Organization (WHO)
 - B. American Nurses Association (ANA)
 - C. Centers for Disease Control and Prevention (CDC)
 - D. Both B and C
5. Which organizations provide evidence-based guidelines for CAUTI prevention?
 - A. Centers for Disease Control and Prevention (CDC)
 - B. Agency for Healthcare Research and Quality (AHRQ)
 - C. American Nurses Association (ANA)
 - D. All of the above
6. Which of the following actions increases the risk of CAUTI?
 - A. Prompt catheter removal when no longer necessary
 - B. Leaving a catheter in place without reassessment
 - C. Maintaining a closed drainage system
 - D. Using aseptic technique during insertion
7. Which of the following is NOT part of evidence-based CAUTI prevention bundles?
 - A. Maintaining a closed drainage system
 - B. Encouraging early catheter removal
 - C. Administering prophylactic antibiotics routinely
 - D. Using aseptic technique during insertion
8. Poor or inconsistent documentation of catheter care can lead to:
 - A. Increased staffing
 - B. Missed reassessments and prolonged catheter use

- C. Improved tracking accuracy
 - D. Faster discharge planning
9. Who is primarily responsible for advocating the removal of a urinary catheter when no longer necessary?
- A. Physician
 - B. Nursing staff
 - C. Case management
 - D. Environmental services
10. A key goal of this education session is to:
- A. Increase CAUTI rates to gather more data
 - B. Improve nursing knowledge of CAUTI prevention strategies
 - C. Improve urinary catheter sales
 - D. Avoid using documentation tools
11. Evidence-based practice recommends catheter removal when:
- A. The patient expresses discomfort
 - B. The patient no longer meets medical criteria for catheter use
 - C. Staffing levels improve
 - D. The urine bag is full
12. Which of the following is a recommended best practice for catheter maintenance?
- A. Disconnecting the catheter system during cleaning
 - B. Keeping the catheter secured and drainage unobstructed
 - C. Rinsing the catheter regularly with sterile water
 - D. Routinely changing the drainage bag for convenience
13. Poor documentation of catheter care practices can lead to:
- A. Increased CAUTI risk and delayed removal
 - B. Improved infection outcomes
 - C. Faster discharges
 - D. More frequent chart audits

14. Nursing staff play a key role in CAUTI prevention by:
- A. Ignoring outdated protocols
 - B. Conducting daily reassessments and advocating for removal
 - C. Waiting for physicians to notice catheter duration
 - D. Documenting only when convenient
15. What is a common barrier to effective CAUTI prevention?
- A. Strong leadership support
 - B. Inconsistent documentation practices and unclear roles
 - C. Mandatory education sessions
 - D. Use of evidence-based guidelines
16. Which of the following supports consistent CAUTI prevention practices?
- A. Standardized nursing education
 - B. Variable documentation styles
 - C. Limited access to guidelines
 - D. Informal training only
17. Evidence-based CAUTI prevention focuses primarily on:
- A. Proper catheter management and timely reassessment
 - B. Increasing equipment availability
 - C. Administrative reporting requirements
 - D. Patient satisfaction surveys

Program Evaluation Form

Your feedback is used to evaluate the quality and clarity of this education session. This evaluation measures participant perceptions of the quality, clarity, and usefulness of the educational content and does not assess clinical performance, practice change, or patient care.

Legend:


1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree

Evaluation Criteria	1	2	3	4	5
1. The learning objectives were clearly defined.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The training covered all the stated objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The content was relevant to CAUTI prevention in this practice setting.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I gained new knowledge or skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The facilitator demonstrated subject matter expertise.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The material was easy to understand and appropriately paced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. The presentation slides supported the content.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. The video demonstrations were helpful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. The session clearly explained aseptic catheter insertion principles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. The session clearly explained CAUTI prevention maintenance principle.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. The troubleshooting information was useful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. The discussion and Q&A were effective.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. The quiz reinforced key points.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. The learning environment supported learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Open-Ended

1. What was the most useful part of the session?
2. What was the least useful part of the session?
3. What suggestions do you have for improving this training session?

Preventing Catheter-Associated Urinary Tract Infections (CAUTI): A Nurse-Led Education Session



Preventing Catheter-Associated Urinary Tract Infections (CAUTI): A Nurse-Led Education and Documentation Initiative

Maylin Rodriguez Fernandez
Walden University

Purpose of this Session

- Learning Objectives:
 - Increase staff knowledge of evidence-based CAUTI prevention strategies
 - Review national guidelines from the Centers for Disease Control and Prevention, the American Nurses Association, and the Agency for Healthcare Research and Quality (CDC, 2014; American Nurses Association, 2018; AHRQ, 2018)
 - Describe best practices for catheter insertion, maintenance, and daily reassessment
 - Clarify the nursing role in supporting CAUTI prevention




Background: CAUTI Risks & Impact

- CAUTIs are a recognized type of health care-associated infection that can occur when urinary catheters are used (CDC, 2014)
- A large proportion of hospital-acquired urinary tract infections are associated with indwelling urinary catheters (AHRQ, 2018)
- Common risk factors include prolonged catheter use, breaks in aseptic technique, and inadequate maintenance practices

Evidence-Based Guidelines

Organization	Key Guidelines/Recommendations	Publication Year
CDC	Hand hygiene, urinary catheter use, and daily reassessment of necessity	2014
ANA	Hand hygiene, aseptic technique, and catheter-to-caregiver practices	2018
AHRQ	Evidence-based practices for catheter care and CAUTI prevention	2018

Key Practices

1. Use sterile technique during catheter insertion (CDC, 2014)
2. Perform a daily reassessment of catheter necessity and remove when no longer indicated (AHRQ, 2018)
3. Perform daily maintenance of catheter systems and ensure strict aseptic technique (AHRQ, 2018)
4. Perform a final change when and where necessary (AHRQ, 2018)

Nursing Role in CAUTI Prevention

- 01 Provide aseptic care during insertion and routine catheter maintenance
- 02 Monitor and document catheter risks and necessity during routine patient care
- 03 Advocate for timely catheter removal when clinical criteria are no longer met (American Nurses Association, 2018)
- 04 Communicate catheter-related concerns with the care team

Importance of Documentation

- Documents catheter insertion, maintenance, and assessment activities
- Supports continuity of care across shifts and providers (PHQ, 2018)
- Reinforces adherence to evidence-based catheter care standards (AUA, 2018)



Common Barriers to CAUTI Prevention



How Education Supports CAUTI Prevention



DO YOU HAVE ANY QUESTIONS?

References

- Agency for Healthcare Research and Quality. (2018). *Preventing catheter-associated urinary tract infections*. <https://www.ahrq.gov/handbook/handbook-and-quick-reference>
- American Nurses Association. (2018). *Safe CAUTI prevention*. <https://www.nurses.org/resources/catheter-associated-urinary-tract-infection-prevention-care-practices>
- Centers for Disease Control and Prevention. (2018). *Guidelines for the prevention of catheter-associated urinary tract infections*. <https://www.cdc.gov/infection-control/guidelines/icsi.html>
- Koola, L., Karamova, S., & Brindley, H. (2018). Impact of educational interventions for professionals on catheter-related practices to reduce healthcare-associated infections and prevent antibiotic resistance: a systematic review. *College Journal of the Royal College of Nursing Australia*, 25(6), 178-184. <https://doi.org/10.1016/j.cj.2018.04.004>
- Patel, P. K., Alving, L. O., Kothari, A. G., Li, C., Manojak, C. L., Ferguson, D. P., Fink, A. M., Sakai, S., Struelens, S., Yehou, D. S., & Madhugani, G. (2019). Strategies to prevent catheter-associated urinary tract infections in acute care hospitals: 2017 Update. *Infection Control and Hospital Epidemiology*, 44(8), 1200-1206. <https://doi.org/10.1017/S0950268819001437>
- So, L. (2016). Effectiveness of nurse-driven protocols in reducing catheter-associated urinary tract infections. *Journal of Nursing Care Quality*, 48(1), 38-45. <https://doi.org/10.1097/NCC.0000000000000081>

CAUTI Prevention Job Aid for Nursing Staff

Educational Reference Notice

This job aid is an educational reference used during the staff education session to summarize evidence-based CAUTI prevention concepts. It is not a clinical protocol, audit tool, documentation standard, or policy directive.

Purpose

This job aid summarizes key evidence-based practices that support prevention of catheter-associated urinary tract infections (CAUTI) and reinforces the nursing role in catheter care using current CDC and ANA guidance and an AHRQ CAUTI prevention toolkit as an educational reference (Centers for Disease Control and Prevention [CDC], 2024; American Nurses Association, 2020; Agency for Healthcare Research and Quality [AHRQ], 2018).

When Is a Urinary Catheter Appropriate?

Urinary catheters should only be used when there is a clear medical indication, such as:

- Acute urinary retention or obstruction
- Accurate measurement of urine output in critically ill patients
- Perioperative use for specific surgical procedures
- End of life comfort care

Daily reassessment of catheter necessity is recommended (CDC, 2024).

Key CAUTI Prevention Practices

Insertion

- Perform hand hygiene before and after the procedure
- Use sterile equipment and aseptic technique
- Ensure proper catheter size and securement (AHRQ, 2018)

Maintenance

- Keep the drainage system closed
- Maintain unobstructed urine flow
- Keep the collection bag below the level of the bladder
- Perform routine perineal care (CDC, 2024)

Daily Reassessment

- Review whether the catheter is still medically necessary
- Communicate concerns about prolonged catheter use to the care team
- Support timely removal when indications are no longer present (American Nurses Association, 2020)

Nursing Responsibilities

Nursing staff play a central role in CAUTI prevention by:

- Applying evidence-based catheter care practices
- Monitoring catheter status during routine patient care
- Advocating for catheter removal when appropriate
- Maintaining clear documentation of catheter care activities

Why This Matters

Consistent application of evidence-based catheter practices helps support patient safety and aligns nursing care with national standards for infection prevention (CDC, 2024; AHRQ, 2018).

Content Expert Review Tools

Content Expert Pre-Implementation Review Tool

Purpose

This tool was used prior to implementation to document review of the CAUTI prevention education materials by content experts. The purpose of the review was to verify accuracy, clarity, and alignment with current CDC and ANA guidelines and an AHRQ CAUTI prevention toolkit used to support educational accuracy (Centers for Disease Control and Prevention [CDC], 2024; American Nurses Association, 2020; Agency for Healthcare Research and Quality [AHRQ], 2018).

This tool supports the development and validation of the intervention and does not function as an outcome measure.

Instructions

Please review the CAUTI prevention education materials and indicate your level of agreement with each statement.

Scale:

1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree

Section A. Content Accuracy and Relevance

Review Item	1	2	3	4	5
The content reflects current evidence-based CAUTI prevention guidelines.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The information is accurate and clinically appropriate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The content aligns with CDC, AHRQ, and ANA recommendations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Key CAUTI prevention concepts are adequately addressed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The materials are appropriate for outpatient urology nurses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Review Item	1	2	3	4	5
Learning objectives are clearly stated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The content is easy to understand.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The organization of the material supports learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The slides and job aids support knowledge acquisition.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The materials are suitable for a 45-minute education session.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section B. Clarity and Educational Quality

Section C. Open-Ended Review

1. Are there any areas of the content that require clarification or revision?
2. Are there any important CAUTI prevention topics that should be added or emphasized?

Section D. Reviewer Information

Reviewer role:

- Unit Nurse Educator
- Infection Prevention Specialist
- CAUTI Clinical Champion

Date of review: _____