

Streamlined Evidence-Based RN Tool: Catheter Associated Urinary Tract Infection (CAUTI) Prevention

Nurse-Driven CAUTI Prevention: Saving Lives, Preventing Harm and Lowering Cost.

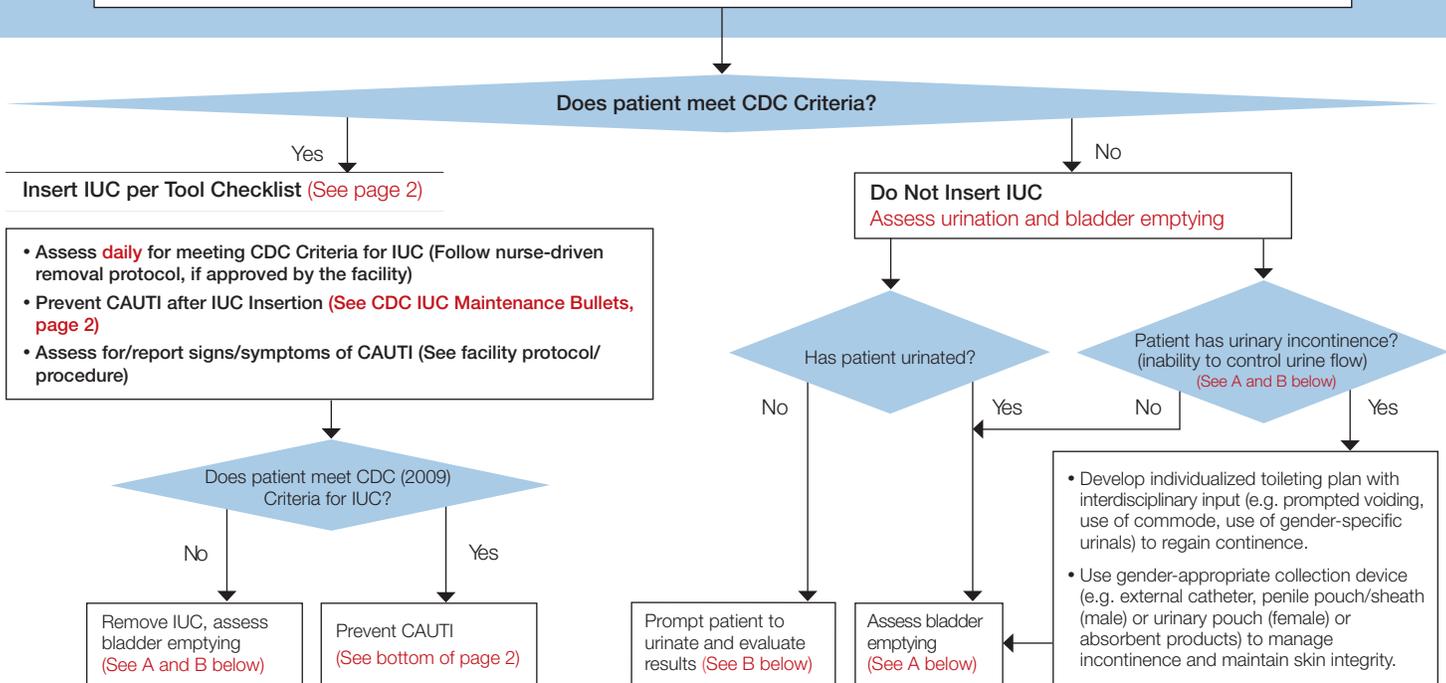
Key Practice Strategies to Reduce CAUTI: 1) Fewer Catheters Used, 2) Timely Removal and 3) Insertion, Maintenance and Post-Removal Care.

Informed by Guidelines for Prevention of Catheter-Associated Urinary Tract Infections (CDC, 2009).

BOX 1

CDC (2009) Criteria for Indwelling Urinary Catheter (IUC) Insertion:

- Acute urinary retention (sudden and painful inability to urinate (SUNA, 2008)) or bladder outlet obstruction
- To improve comfort for end-of-life care if needed
- Critically ill and need for accurate measurements of I&O (e.g., hourly monitoring)
- Selected surgical procedures (GU surgery/colorectal surgery)
- To assist in healing open sacral or perineal wound in the incontinent patient
- Need for intraoperative monitoring of urinary output during surgery or large volumes of fluid or diuretics anticipated
- Prolonged immobilization (potentially unstable thoracic or lumbar spine, multiple traumatic injuries such as pelvic fractures)



Assess for Adequate Bladder Emptying

A. If Patient HAS urinated (voided) within 4-6 hours follow these guidelines:

- If minimum urinated volume ≤ 180 ml in 4-6 hours or urinary incontinence present, confirm bladder emptying.
 - Prompt patient to urinate/check for spontaneous urination within 2 hours if post-void residual (PVR) < 300-500 ml
 - Recheck PVR within 2 hours.*
 - Perform straight catheterization for PVR per scan ≥ 300-500 ml.
 - Repeat scan within 4-6 hours and determine need for straight catheterization.
 - Report to provider if retention persists ≥ 300-500ml.
 - Perform ongoing straight catheterization per facility protocol to prevent bladder overdistension and renal dysfunction (CDC, 2009), usually every 4-6 hours.
- If urinated >180 ml in 4-6 hours (adequate bladder emptying), use individual plan to promote/maintain normal urination pattern.

B. If Patient HAS NOT urinated within 4-6 hours and/or complains of bladder fullness, then determine presence of incomplete bladder emptying.*

- Prompt patient to urinate. If urination volume ≤ 180 ml, perform bladder scan.*

*Perform bladder scan (CDC, 2009) to determine PVR. If no scanner available, perform straight catheterization.

Indwelling Urinary Catheter (IUC) Insertion Checklist to Prevent CAUTI in the Adult Hospitalized Patient: Important Evidence-Based Steps.	Yes	Yes with Reminder	Comments
Before IUC insertion:			
1) Determine if IUC is appropriate per the CDC Guidelines (CDC, 2009) (See page 1, Box 1).			
2) Select smallest appropriate IUC (14 Fr., 5ml or 10 ml balloon is usually appropriate unless ordered otherwise).			
3) Obtain assistance PRN (e.g., 2-person insertion, mechanical aids) to facilitate appropriate visualization/insertion technique.			
4) Perform hand hygiene.			
Patient Preparation/Insertion of IUC:			
1) Perform peri-care , then, re-perform hand hygiene.			
2) Maintain strict aseptic technique throughout the actual IUC insertion procedure, re-perform hand hygiene upon completion. <ul style="list-style-type: none"> • Use <u>sterile gloves and equipment</u> and establish/maintain sterile field. • Do not pre-inflate the balloon to test it, as this is not recommended. 			
3) Insert IUC to appropriate length and check urine flow <u>before</u> balloon inflation to prevent urethral trauma. <ul style="list-style-type: none"> • In males, insert fully to the IUC “y” connection, or in females, advance ~1 inch or 2.5 cm beyond point of urine flow. 			
4) Inflate IUC balloon correctly: Inflate to 10 ml for catheters labeled 5 ml or 10 ml per manufacturer’s instructions.			
After IUC insertion completion:			
1) Perform Triple Action for IUC/Drainage System: <ul style="list-style-type: none"> • Secure IUC to prevent urethral irritation. • Position drainage bag below the bladder (but not resting on the floor). • Check system for closed connections and no obstructions/kinks. 			

Note: Refer to Expert Nurse for consults (e.g., urology, WOC, infection control, geriatrics, rehabilitation) and other team members per facility protocol to reduce iuc use and days and to manage complex care (e.g., incontinence, immobility).

BOX 2

Maintenance of IUC/Drainage System and Other Patient Care to Prevent CAUTI (CDC 2009)

<ul style="list-style-type: none"> • Maintain appropriate catheter securement per facility protocol/procedure and the drainage bag below the level of the bladder at all times (but not on the floor, even when emptying). • Empty the drainage bag regularly using a separate, clean collecting container for each patient; avoid splashing, and prevent contact of the drainage spout. • Maintain unobstructed urine flow by keeping the catheter and tube free from kinking. • Maintain a closed drainage system. 	<ul style="list-style-type: none"> • If breaks in the closed system are noted (e.g., disconnection, cracked tubing), replace the catheter and collecting system following above IUC insertion checklist. • Perform perineal hygiene at a minimum, daily per facility protocol/procedure and PRN. • Use timely fecal containment device when appropriate for fecal incontinence. • Teach nursing assistants and patient/family iuc maintenance.
--	--

References

Gould, C.V., Umscheid, C.A., Agarwal, R.K., Kuntz, G., Pegues, D.A. (2010). Guideline for prevention of catheter-associated urinary tract infections. *Infect Control Hosp Epidemiol*, 31(4), 319-326. Retrieved from <http://www.jstor.org/stable/10.1086/651091>.

Lo, E., Nicolle, L.E., Coffin, S.E., Gould, C., Maragakis, L.L., Meddings, J.,...Yokoe, D.S. (2014). Strategies to prevent catheter-associated urinary tract infections in acute care hospitals: 2014 update. *Infect Control Hosp Epidemiol*, 35(5), 464-479. Retrieved from <http://www.jstor.org/stable/10.1086/675718>.

Meddings, J., Rogers, M.A., Krein, S.L., Fakh, M.G., Olmsted, R.N, Saint, S. (2013). Reducing unnecessary urinary catheter use and other strategies to prevent catheter-associated urinary tract infection: an integrative review. *BMJ Qual Saf*, 23(4), 277-289. Retrieved from <http://qualitysafety.bmj.com/content/23/4/277.long>.

Stone, P.W., Pogorzelska-Maziarz, M., Herzig, C.T., Weiner, L.M., Furuya, E.Y., Dick, A., Larson, E. (2014). State of infection prevention in US hospitals enrolled in the National Health and Safety Network. *Am J Infect Control*, 42(2), 94-99. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/24485365>

Acute Urinary Retention (2008). Society of Urologic Nurses and Associates. <http://www.suna.org/resources/acuteUrinaryRetention.pdf>

