



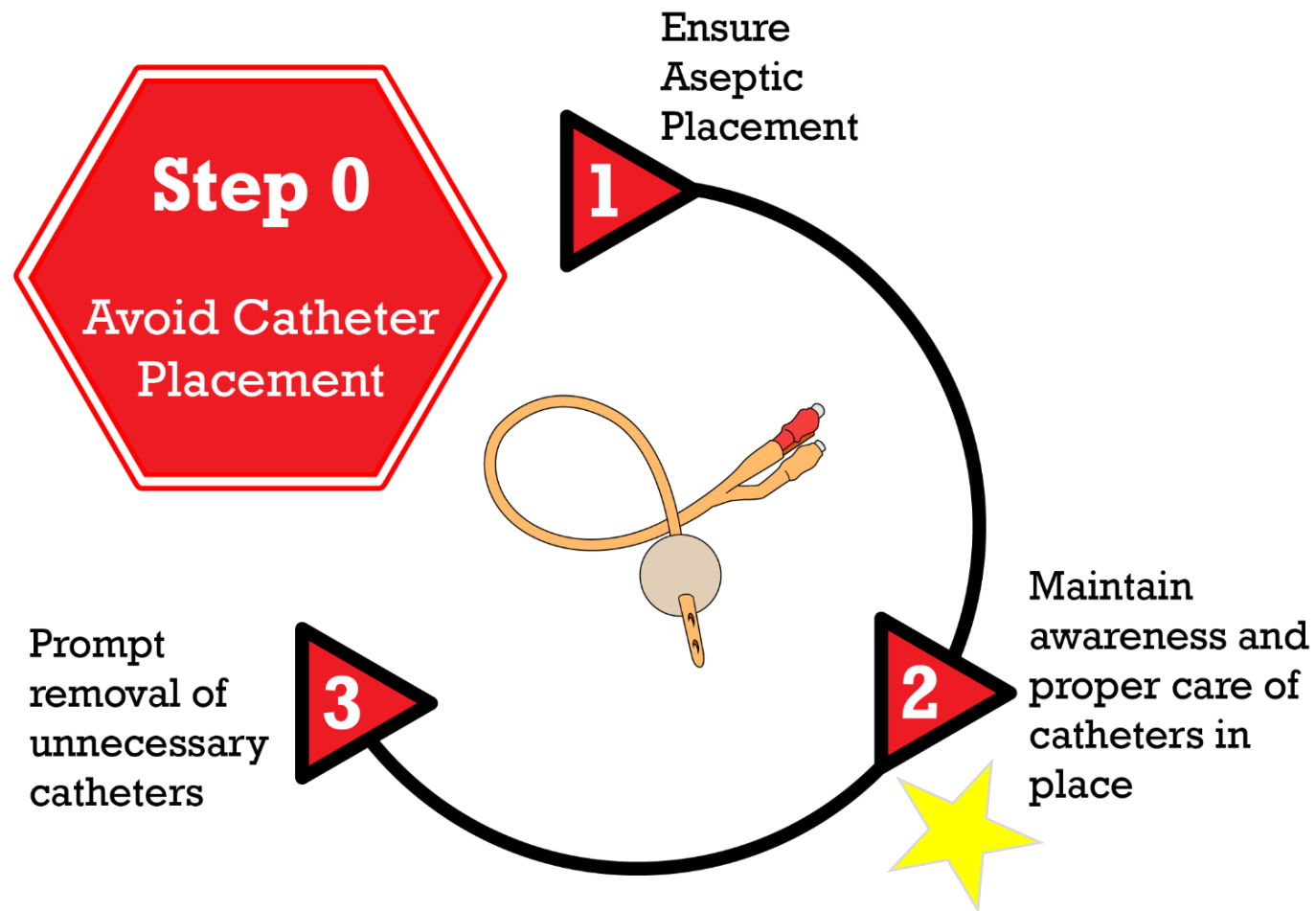
AHRQ Safety Program for Intensive Care Units: Preventing CLABSI and CAUTI

Indwelling Urinary Catheter Maintenance

Maintaining Awareness and Proper Care of Catheters in Place



Disrupting the Life Cycle of a Catheter Device^{1,2}



Patel PK, Gupta A, Vaughn VM, et al. Review of strategies to reduce central line-associated bloodstream infection (CLABSI) and catheter-associated urinary tract infection (CAUTI) in adult ICUs. *J Hosp Med.* 2018 Feb 1;13(2):105-16. Epub 2017 Nov 8. Used with permission of Journal of Hospital Medicine.

Why Is Maintenance Important?^{3,4}

- Risk of catheter-associated urinary tract infection (CAUTI) increases by 3–7% each day that a catheter is in place
- Up to 50% of patients with an indwelling urinary catheter for 5 days or more will have asymptomatic bacteriuria (ASB) or fungus in their urine, and 100% will have bacteriuria by day 30
- Contamination can occur due to breaks in the closed drainage system or from the drainage bag
 - From patient (meatal, rectal, or vaginal)
 - From hands of healthcare worker during insertion or manipulation of catheter and collection system

Indwelling Urinary Catheter Care Essentials⁵

AHRQ Safety Program for Reducing CAUTI in Hospitals

PREVENT
HAIs
Healthcare
Associated
Infections

Appendix I. Catheter Care Pocket Card

Interventions To Prevent CAUTI in Patients Who Have a Documented Medical Need for Indwelling Urinary Catheter

Prevention strategies must focus on clear indications for the insertion of a urinary catheter and prompt removal when no longer necessary. When an indwelling urinary catheter is indicated, the following interventions should be in place to help prevent infection:

- Use indwelling catheters only when medically necessary
- Use aseptic insertion technique with appropriate hand hygiene and gloves
- Allow only trained health care providers to insert catheter
- Properly secure catheters to prevent movement and urethral traction
- Maintain a sterile closed drainage system
- Maintain good hygiene at the catheter-urethral interface
- Maintain unobstructed urine flow
- Maintain drainage bag below level of bladder at all times
- Remove catheters when no longer needed
- Do not change indwelling catheters or drainage bags at arbitrary fixed intervals
- Document indication for urinary catheter on each day of use
- Use reminder systems to target opportunities to remove catheter
- Use external (or condom-style) catheters if appropriate in men
- Use portable ultrasound bladder scans to detect residual urine amounts
- Consider alternatives to catheters, such as intermittent catheterization and portable ultrasound bladder scans to detect residual urine amounts

- Use appropriate hand hygiene and gloves
- Properly secure catheters to prevent movement and urethral traction
- Maintain a sterile closed drainage system
- Maintain good hygiene at the catheter-urethral interface
- Maintain unobstructed urine flow
- Maintain drainage bag below bladder level at all times
- Do not change catheters or drainage bags at arbitrary fixed intervals
- Document indication for catheter on each day of use

Infection Prevention and IUC Maintenance⁶⁻⁷

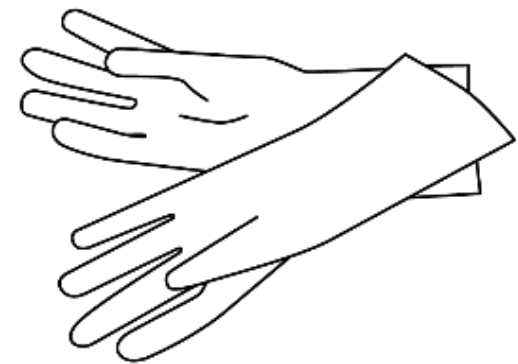
Hand Hygiene

Hand hygiene is performed before each and every patient contact and before any manipulation of the catheter device or site



Standard Precautions

Including wearing gloves and gowns, as appropriate, during any manipulation of the catheter or collecting system



Strategies To Improve Hand Hygiene^{6,7}

Challenges	Strategies
<ul style="list-style-type: none">• Hand hygiene products not available or close to point of care• Multiple tasks performed without hand hygiene in between	<ul style="list-style-type: none">• Education related to specific aspects of indwelling urinary catheter care and appropriate setting for placement• Audit and feedback

Maintain a Closed System⁶

- If breaks in aseptic technique, disconnection, or leakage occur, replace the catheter using aseptic technique and sterile equipment
- Consider using indwelling urinary catheters with preconnected, sealed catheter tubing junctions

Assessment—Urinary Catheter Rounding

Checklist	Yes or No
Does the patient still need the urinary catheter?	
Is the tamper resistant seal intact?	
Is the catheter secured?	
Is the bag below the level of the bladder?	
Is the bag off the floor?	

Barriers to Maintaining a Closed System⁷

Barriers	Strategies
Need to change urinary collection device to a urimeter	Work with the ED and OR to require that all patients who may go to the ICU have an indwelling urinary catheter that is preconnected to a urimeter If the patient arrives with an indwelling urinary catheter already connected to a regular bag, change the catheter and urinary drainage system
Need for specialized catheter that is not preconnected	Work with your supply chain to request that vendors supply preconnected indwelling specialized urinary catheters

Maintain Unobstructed Urine Flow



Example of securement device

- Use an indwelling urinary catheter securement device to anchor the catheter
- Ensure the bag is below the level of the bladder and keep it off the floor
- Make sure the bag is emptied prior to transport

Unobstructed Urine Flow: Barriers and Strategies

Barriers	Strategies
Transfer of patients from the ICU to diagnostic or other treatment areas.	Incorporate observation of indwelling urinary catheter and bag into routine rounds. Observe ancillary services such as transport.
Indwelling urinary catheter bags placed on the patient's bed during diagnostic tests.	Perform a simple check prior to transport to ensure that the catheter is patent and the urinary drainage bag is below the level of the bladder.
Indwelling urinary catheter bags that become full during procedures.	Empty indwelling urinary catheter drainage bags prior to transport.

Other Maintenance Strategies⁷⁻⁹

- Perform routine meatal care
 - Daily with the bath and after a bowel movement – soap and water recommended in the guidelines
- Avoid irrigation unless bladder obstruction is anticipated
- Obtain specimens aseptically
- Do not routinely change catheters
- If a catheter has been in place for greater than 2 weeks, change catheter before inserting obtaining a urine specimen or starting antibiotics.

References

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