Indwelling urinary catheter (Foley) insertion, female

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Introduction

An indwelling urinary (Foley) catheter remains in the bladder to provide continuous urine drainage. A balloon inflated at the catheter's distal end prevents it from slipping out of the bladder after insertion.

Insert an indwelling urinary catheter only when absolutely necessary because its use is associated with an increased risk of urinary tract infection, with the risk increasing with each day of use. Catheter-associated urinary tract infection (CAUTI) is the most common type of health care–associated infection in the United States, accounting for 35% of all such infections. 

Hospital-acquired condition alert: Keep in mind that the Centers for Medicare and Medicaid Services consider CAUTI a hospital-acquired condition because it can be reasonably prevented using a variety of best practices. Make sure to follow CAUTI prevention practices—such as performing hand hygiene before and after any catheter manipulation; maintaining a sterile, continuously closed drainage system; maintaining unobstructed urine flow; emptying the collection bag regularly; replacing the catheter and collection system using sterile technique when breaks in sterile technique, disconnection, or leakage occurs; and discontinuing the catheter as soon as it's no longer clinically indicated—when caring for a patient with an indwelling urinary catheter to reduce the risk of CAUTI.

Consider alternatives to indwelling urinary catheterization when appropriate, such as intermittent catheterization in spinal cord injury patients and in patients with bladder emptying dysfunction. Insert an indwelling urinary catheter only for an appropriate indication, such as:

- acute urinary retention or bladder outlet obstruction
- need for accurate urine output measurements in critically ill patients
- perioperative use for patients undergoing urologic surgery or other procedures on structures of the genitourinary tract
- prolonged surgery (with removal of catheters inserted for this purpose in the postanesthesia care unit)
- surgery requiring large-volume infusions or diuretic use
- intraoperative urinary output monitoring
- assistance in the healing of open sacral or perineal wounds or skin grafts in selected patients with incontinence
- prolonged immobilization (such as for a potentially unstable thoracic or lumbar spine or multiple traumatic injuries, including pelvic fractures)
- improved comfort for end-of-life care, if needed.

Use sterile technique when inserting, manipulating, and maintaining an indwelling urinary catheter. Maintain a sterile, continuously closed drainage system; don't disconnect or break the system unless absolutely necessary. Avoid irrigation unless necessary. When a patient has an indwelling urinary catheter inserted for surgery, ensure its discontinuation within 24 hours of surgery unless another indication exists. Review the need for the indwelling urinary catheter daily, and remove it as soon as it's no longer necessary.

Equipment

- Sterile indwelling urinary catheter (smallest bore catheter possible that will support adequate urine drainage)
- Syringe filled with 10 mL of sterile water
- Fluid-impermeable pad
- Gloves
- Sterile gloves
- Sterile drape
- Sterile fenestrated drape
- Sterile presaturated antiseptic swabs or antiseptic solution and sterile swabs or sterile cotton balls and plastic forceps
- Single-use packets of soap-containing wipes or soap, water, and a washcloth
- Single-use packet of sterile water-soluble lubricant
- Sterile drainage collection bag
- Securement device or tape
• Optional: insertion checklist, towel, examination light or flashlight, bladder ultrasonography device, gown, mask, goggles, mask with face shield

Prepackaged sterile disposable kits are available that usually contain all of the necessary equipment.

**Implementation**

- Verify the practitioner’s order.
- Assess the patient to make sure that an indwelling urinary catheter is indicated; assess for alternatives to indwelling urinary catheter use. If necessary, use bladder ultrasonography to measure the volume of urine in the patient’s bladder to avoid unnecessary catheterization. (See the “Bladder ultrasonography” procedure).
- Check the patient’s medical record for allergies, including those to latex and iodine.
- Gather the necessary equipment. Use the smallest bore catheter possible that will support adequate urine drainage (unless otherwise clinically indicated) to minimize bladder neck and urethral trauma.
- Obtain the assistance of a coworker to help with patient positioning and to ensure sterile technique during insertion.
- Ensure adequate lighting.
- Use an insertion checklist, if available in your facility, to guide the insertion process.
- Perform hand hygiene.
- Confirm the patient’s identity using at least two patient identifiers.
- Provide privacy.
- Explain the procedure to the patient; inform her of the reason for catheterization and what to expect in the way of discomfort. Discuss the risks associated with indwelling urinary catheter use and the necessary measures to reduce the risk of CAUTI. Advise the patient and her family to remind staff to perform hand hygiene before and after handling the catheter if they fail to do so.
- Raise the patient's bed to waist level when providing patient care to prevent caregiver back strain.
- Put on gloves and, as needed, other personal protective equipment to comply with standard precautions.
- Place the patient in a supine or lithotomy position with her knees bent and legs abducted to allow visualization of the urinary meatus. Alternately, position the patient on her side in a knee-chest position if she's unable to tolerate supine or lithotomy positioning.
- Place a fluid-impermeable pad on the bed between the patient's legs and under her hips to avoid soiling the linens.
- Open the outer packaging of the prepackaged insertion kit and place it between the patient's legs.
- Wash the patient's periurethral area using the soap-containing wipes. Alternatively, clean the area with warm water and soap using a washcloth. Rinse and dry the area thoroughly.
- Remove and discard your gloves.
- Perform hand hygiene.
- Using sterile technique, open the insertion kit wrap.
- Put on sterile gloves.
- Place a sterile underpad drape beneath the patient; shield your gloves by cuffing the drape material over your gloved hands to prevent contamination.
- Place a sterile fenestrated drape over the perineal area to create a sterile field (as shown below). Take care not to contaminate your sterile gloves.
• Tear open the packet of presaturated antiseptic swabs or saturate sterile swabs or cotton balls with antiseptic solution. Be careful not to spill the solution on the equipment.

• Open the container of water-soluble lubricant, and deposit the lubricant into the insertion kit tray.

• Open the catheter and place it in the tray with the lubricant.

• If not preconnected, attach the drainage bag to the other end of the catheter.

• Attach the syringe filled with sterile water to the balloon inflation port. Don't inflate the balloon before insertion unless directed by the manufacturer because doing so can cause microtears, which increase the risk of infection.

• Separate the labia majora and labia minora as widely as possible with the thumb, middle, and index fingers of your nondominant hand so you have a full view of the patient's urinary meatus. Keep the labia well separated throughout the procedure so that they don't obscure the urinary meatus or contaminate the area when it's cleaned.

• With your dominant hand, use an antiseptic swab or pick up a sterile antiseptic-soaked cotton ball with plastic forceps to clean the labia minora furthest from you using a downward stroke (as shown below); then discard the swab or cotton ball. Repeat for the labia minora closest to you. Use another antiseptic swab or antiseptic-soaked cotton ball to clean the area between the labia minora.

• Maintaining sterile technique, pick up the catheter with your dominant hand and ensure that the catheter tip is lubricated with water-soluble lubricant.

• Hold the catheter 2” to 3” (5 cm to 7.6 cm) from the tip and slowly insert the lubricated catheter tip into the urinary meatus; expect to be able to advance the catheter without meeting resistance.

• Continue to hold the labia apart until urine begins to flow, and then advance the catheter about 2” to 3” (5 cm to 7.6 cm) further to make sure that the balloon is in the bladder and not in the urethra. If urine doesn't begin to flow, ask your coworker to apply gentle pressure to the suprapubic region, which may initiate urine flow. If you
Inadvertently insert the catheter into the vagina, leave it there as a landmark. Then begin the procedure over again using new supplies.

- Inflate the balloon using the water-filled syringe (as shown below), instilling the recommended amount of sterile water specified on the catheter to secure the catheter inside the bladder. Gently pull the catheter until the inflated balloon is snug against the bladder neck.

- Secure the catheter to the patient’s thigh using a securement device (or tape if a securement device isn’t available) to prevent possible tension on the urogenital trigone.

- Keep the catheter and drainage tube free from kinking to prevent the obstruction of urinary flow.

- Position the drainage bag below the level of the patient’s bladder or hip to facilitate drainage and prevent urine stasis, which increases the risk of CAUTI. Don’t place the drainage bag on the floor.

- Return the bed to the lowest position to prevent falls and maintain patient safety.

- Dispose of all used supplies in appropriate receptacles.

- Remove and discard your gloves and other personal protective equipment, if worn.

- Perform hand hygiene.

- Document the procedure.

**Special Considerations**

- Patients at high risk for latex hypersensitivity include those with spina bifida, spinal cord injury, atopy, certain food allergies, and occupational exposure. Provide these patients with a latex-free environment by avoiding all products containing latex proteins, including gloves, catheters, condoms, drains, and injection ports.

- In addition to hypersensitivity reactions, latex urethral catheters have been associated with an increased risk of cytotoxicity, urethritis, stricture, urinary tract infection, and encrustation. Selection of an alternate material, such as 100% silicone, reduces these risks, particularly when long-term catheterization is likely.

- Empty the drainage bag at least once per shift using a separate, clean collecting container for each patient; avoid splashing and prevent contact of the drainage spigot with the collecting container.

- If you need a small urine sample for laboratory examination (for culture or urinalysis), thoroughly disinfect the needleless sampling port with a disinfectant pad and then allow it to dry. Aspirate urine from the sampling port using a sterile adapter or syringe. If you need a large volume for special analysis (not culture), obtain the sample from the drainage bag using sterile technique.

- Monitor and record the patient’s intake and output.

- Inspect the catheter and tubing periodically while they’re in place to detect compression or kinking that could obstruct urine flow. Explain the basic principles of gravity drainage so that the patient realizes the importance of keeping the drainage tubing and collection bag lower than her bladder at all times.

**Patient Teaching**

If the patient will be discharged with a long-term indwelling urinary catheter, teach her and her family all aspects of daily catheter maintenance, including care of the skin and urinary meatus, signs and symptoms of urinary tract infection or
obstruction, proper technique for catheter irrigation (if appropriate), and the importance of adequate fluid intake to maintain patency.\textsuperscript{3,12}

\section*{Complications}
Complications associated with indwelling urinary catheter use include CAUTI, genitourinary trauma, retained balloon fragments, bladder fistula (with prolonged use), bladder stone formation, and incontinence.\textsuperscript{3,39,40}

\section*{Documentation}
Document your assessment findings and the indication for catheter use. Record the date and time of insertion, the size and type of catheter used, and the amount of sterile water used to inflate the balloon. Record the patient's intake and output. Note the characteristics of the urine obtained. Document any complications, the date and time the practitioner was notified, the prescribed interventions, and the patient's response to those interventions. Also record patient teaching and the patient's comprehension of that teaching.

\textit{This procedure has been reviewed by the Academy of Medical-Surgical Nurses.}

\section*{References}

\begin{enumerate}
\item The Joint Commission. (2016). Standard NPSG.07.06.01. \textit{Comprehensive accreditation manual for hospitals}. Oakbrook Terrace, IL: The Joint Commission. (Level VII)
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### Additional References


### Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions

The following leveling system is from *Evidence-Based Practice in Nursing and Healthcare: A Guide to Best Practice* (2nd ed.) by Bernadette Mazeuk Melnyk and Ellen Fineout-Overholt.

- **Level I:** Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials (RCTs)
- **Level II:** Evidence obtained from well-designed RCTs
- **Level III:** Evidence obtained from well-designed controlled trials without randomization
- **Level IV:** Evidence from well-designed case-control and cohort studies
- **Level V:** Evidence from systematic reviews of descriptive and qualitative studies
- **Level VI:** Evidence from single descriptive or qualitative studies
- **Level VII:** Evidence from the opinion of authorities and/or reports of expert committees


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