URINARY CATHETER: STRAIGHT AND INDWELLING (FOLEY) CATHETER INSERTION (MALE)

SUMMARY
This skill describes how to insert an intermittent or indwelling urinary catheter in a male patient.

ALERT
The use of indwelling catheters may cause genitourinary injury, trauma, and urinary tract infection (UTIs). Males have an increased risk of trauma due to having a long urethra. Use the smallest-size catheter possible to minimize trauma, reduce the risk of infection, and promote adequate drainage.

Some manufacturers pretest their urinary catheter balloons and no longer recommend testing the balloon by injecting fluid from the prefilled sterile water syringe into the balloon port. Follow the manufacturer's instructions and the organization's practice.

If contamination occurs before or during the catheter insertion procedure, start the procedure over with a new catheter.

Indwelling catheters are not recommended for prolonged use, except with a patient who cannot be managed effectively using another method.

OVERVIEW
Urinary catheters are flexible tubes inserted into the urinary bladder. The two main types of urinary catheters used for male patients are straight and curved (coude) tip catheters. A coude catheter has a slightly bent or curved tip, which permits safe guidance around the curvature of an enlarged prostate gland or other urinary abnormalities. It serves as an alternative for patients whose anatomy prevents the use of a straight catheter.
The two types of catheterizations are intermittent (straight or "in and out") catheterization and indwelling catheterization. Either type of catheter may be used for intermittent and indwelling catheterization. Intermittent catheterization occurs when a catheter is inserted into the bladder through the urethra to empty the bladder, instill medication, determine the amount of residual urine in the bladder, or obtain a urine specimen, and then it is removed. This type of catheterization can occur on a one-time basis or intermittently when the patient cannot urinate because of a urinary obstruction or a neurologic disorder such as a spinal cord injury. Patients can learn to insert straight catheters using clean insertion technique in the home.

Patients who require self-catheterization have various options in catheter products. A single catheter comes prepackaged in a sterile saline solution that serves as a lubricant (called a hydrophilic catheter). In addition, self-contained systems are available, consisting of a catheter prepackaged in sterile saline with a preconnected drainage bag. Intermittent catheterization is becoming the gold standard after surgical interventions and for the management of bladder-emptying dysfunctions. Advantages to intermittent catheterization, including lower associated risks of catheter-associated urinary tract infection (CAUTI) and complications, may make is a more desirable and safer option than indwelling catheterization.

An indwelling (Foley) catheter is inserted via the urethra using a sterile preassembled closed drainage system that acts as a reservoir for urine drained from the bladder. An indwelling

catheter has a separate lumen, which is used to inflate a balloon that holds the catheter in the bladder for short-or-long term use. Closed drainage systems and preassembled drainage systems may help reduce the incidence of CAUTIs. Indications for an indwelling catheter include:

- Measuring urine output accurately in critically ill patients
- Preventing urine retention
- Increasing comfort in terminally or severely ill patients who are incontinent and managing any skin damage caused by incontinence, when all other methods of managing urinary incontinence have failed
- Managing voiding difficulties in patients with neurologic disorders
- Providing immediate treatment of acute urine retention or bladder outlet obstruction
- Managing perineal or sacral open pressure injuries that are no healing because of continual incontinence

EQUIPMENT

Ensure that all necessary supplies and durable medical equipment are available before the home visit

- Gloves
- Blanket or sheet
- Waterproof absorbent pad
- Pillow
- Basin with warm water, soap, washcloth, and towel for perineal care
- Catheter kit containing these sterile items:
    - Waterproof drapes (including one that is fenestrated [has an opening in the center of drape])
    - Sterile gloves (extra pair optional)
    - Sterile urine collection system
    - Prefilled syringe with sterile water (to inflate balloon of indwelling catheter only)
    - Appropriate sterile specimen container
    - Antiseptic cleansing agent (e.g., povidone-iodine)
    - Sterile cotton balls or sterile antiseptic swabs
    - Forceps
    - Lubricant
    - Proper-size urinary catheter with preassembled drainage system (indwelling catheter only)
    - Clip to attach tubing to bottom sheet
- Multipurpose hook-and-loop fastener tube holder or commercial catheter securement device
- Label, biohazard bags, and ice slurry as needed
- Graduated cylinder

PROCEDURE

Catheter Insertion

1. Perform hand hygiene

2. Introduce yourself to the patient
3. Verify the correct patient using two identifiers
4. Explain the procedure to the patient and ensure that he agrees to treatment
5. Verify the practitioner's order and assess the patient for pain
6. Prepare an area in a clean, convenient location and assemble the necessary supplies
7. Assess the patient's knowledge of the purpose of catheterization, whether he has had a catheter placed previously, and his concerns about the procedure, including culturally related concerns.
8. If the patient had a previous catheterization, determine the catheter size
9. Perform a patient assessment, including:
    a) Time of last urination
    b) Intake and output (I&O)
    c) Level of awareness or developmental stage
    d) Mobility and physical limitations
    e) Age
    f) Allergies (specifically to latex and povidone-iodine)
10. Provide privacy for the patient
11. Perform hand hygiene and don gloves
12. Assess the bladder for fullness. (A distended bladder is palpable above the symphysis pubis)
13. Assess for perineal anatomic landmarks, erythema, drainage, and odor
14. Remove gloves and perform hand hygiene
15. Obtain assistance (if available) to position and support a patient who is weak, frail, obese, or confused.
16. If the patient is in a hospital bed, adjust it to the appropriate working height. Facing the patient, stand on the left side of the bed if right-handed or on the right side if left-handed. If side rails are in use, raise the side rail on the opposite side of the bed and lower the side rail on the working side.
    Rationale: Adjusting the bed height promotes ergonomics. Using the side rails in this manner promotes the patient's safety.
17. Perform hand hygiene and don gloves
18. Assist the patient with removing lower-body clothing. Lift the upper body clothing to the patient's mid-abdomen. Cover the lower extremities with a blanket or sheet, exposing only the genitalia.
19. Place a waterproof pad under the patient
20. Assist the patient to a supine or sitting position with thighs slightly abducted. Support the patient with a pillow if needed to maintain position.
    Rationale: a supine or sitting position is comfortable for the patient and provides a better view of the penis.
21. Cleanse the perineal area with soap and water as needed and dry
22. Discard supplies, remove gloves, and perform hand hygiene
23. Open the outer wrapping of the indwelling catheterization kit or intermittent catheterization kit.
    a) Tear the package on the paper-lined edge of the wrap
    b) Place the inner wrapped box on an easily accessible, clean bedside table (if available) or set it between the patient's leg

Rationale: the patient's size and positioning should dictate exact placement for easy access to supplies and maintenance of aseptic technique during the procedure. Putting the catheter tray between the patient's legs works best with flexible, average-size patients.

c) Place the empty outer plastic wrap near the end of the bed to use for waste disposal

24. Open the sterile inner package containing the catheter supplies. Using sterile technique, fold back each flap of the sterile package one at a time, with the last flap opened toward the body. The tray is not sitting open on its own sterile field.
25. Place the waterproof sterile drape or fenestrated drape (when packaged as the first item in tray).
    a) Sterile drape packed in tray
        i. If sterile gloves are packed as the first item, don them and then apply the drape
        Rationale: If the sterile drape is packaged before the gloves, the drape must be put in place before sterile gloves are donned
        ii. Remove the square sterile drape from the tray, touching the edges only. Do not touch any other item in the kit.
        Rationale: Handling the drape in this manner keeps the drape and other items sterile
        iii. Maintain sterility of the drape and let it unfold after removing it from the tray. Fold the top edge of the drape away from the patient to form a cuff over both hands.
        iv. Apply the drape over the thighs (shiny side down) just below the penis to create a sterile field.
    b) Fenestrated drape packed in tray
        i. Don sterile gloves if not already in place
        ii. Lift the fenestrated sterile drape out of the tray. Allow it to unfold without touching a nonsterile surface
        iii. Form a cuff from the edges to protect the sterile gloves
        iv. Place the drape over the pelvis with the fenestrated slit resting over the penis
        Rationale: Draping in this manner creates a sterile field around the penis with an opening that allows access to it
26. Move the tray or box on the sterile field closer to the patient and organize the remaining items on the sterile field. Form a continuous sterile field with the sterile wrap under the tray or box and the drape under the patient.
    Rationale: This arrangement allows manipulation of the sterile catheter without reaching over the nonsterile area.
27. Prepare the items for an indwelling catheter with a preassembled closed urinary drainage system.
    Rationale: a kit for a straight or intermittent catheterization as no drainage bag. Some kits may contain a specimen container.
        a) Check for a secure connection at the tubing and catheter connection site
        b) If recommended by the manufacturer, test the catheter balloon by injecting fluid from the prefilled sterile water syringe into the balloon

port and then inflating and deflating the balloon. Maintain the sterility of the catheter (connected to the syringe) onto the sterile barrier.

c) Loosen the lid on the sterile specimen is required. Otherwise, discard the container in plastic wrap set aside for that purpose.
d) Open the package of sterile antiseptic solution and pour the solution over the sterile cotton balls. If the kit contains sterile antiseptic swabs instead of solution, open the package with stick ends up for access.
e) Open the packet containing lubricant and squeeze the lubricant onto the sterile field. If the lubricant is provided in a prefilled syringe, remove the protective cap, and spread lubricant into the sterile tray.

28. Place the catheter tip in the lubricant.
    Rationale: Lubricating the catheter minimizes urethral trauma and discomfort during insertion
29. Cleanse the urethral meatus, explaining to the patient what is being done as each step is performed.
    a) Perform these steps with the nondominant hand:
        i. If the patient is not circumcised, retract the foreskin
           At this point, consider the nondominant hand contaminated
        ii. Grasp the penis at the shaft just below the glans
        iii. Gently spread the urethral meatus so the opening is more visible
        iv. Maintain the position of the nondominant hand throughout the procedure
           Rationale: Accidental release of the foreskin or dropping the penis during cleansing requires repeating the process because the area becomes contaminated.
    b) Perform these steps with the dominant hand:
        i) Grasp an antiseptic-soaked cotton ball with forceps or pick up an antiseptic swab stick
        ii) Cleanse the penis by moving the cotton ball or swab in a circular motion form the urethral meatus down to the base of the glans
        iii) Repear cleansing, using a clean cotton ball or stick each time
           Rationale: the dominant gloved hand remains sterile
30. With the sterile dominant hand, pick up the catheter. Hold the distal end of the catheter loosely coiled in the palm of the dominant hand.
    Rationale: Holding the catheter near the tip allows easier manipulation during insertion into the urethral meatus and prevents the catheter tip from touching and contaminated surface.
31. Inset the catheter
    a) Indwelling catheter
        i. Lift the penis to a position perpendicular to the patient's body and apply light traction.
           Rationale: This position straightens the urethral canal to ease catheter insertion
        ii. Ask the patient to bear down gently as if to void and slowly insert the catheter through the urethral meatus

Rationale: Relaxation of the external sphincter aids catheter insertion

iii. Advance the indwelling catheter to the bifurcation of the drainage and ballon inflation port (for insertion in an adult; advance the intermittent catheter until urine flows through the tubing
Rationale: advancing the indwelling catheter to the bifurcation of the drainage and balloon inflation port ensures proper placement of the catheter through the longer urethra for a male. Natural resistance occurs as the catheter enters the external sphincter; however, force should not be used to insert the catheter inward.
If resistance is met, do not attempt forceful insertion.

A. If resistance to catheter insertion occurs, instruct the patient to take slow, deep breaths to promote relaxation and insert the catheter slowly
B. Alternatively, rest the arm against the patient's leg and ask him to relax. When the leg muscles begin to relax, continue insertion
C. If resistance to insertion persists, the patient may have an enlarged prostate gland or urinary abnormalities. Notify the practitioner.

b) Coude Catheter
Rationale: A practitioner order for a Coude catheter, with a slightly curved end, may be needed to facilitate insertion.

i. Lift the penis to a position perpendicular to the patient's body and apply light traction.
Rationale: This position straightens the urethral canal to ease catheter insertion
ii. Turn the catheter to the facing up position
iii. Ask the patient to bear down as if to void and slowly insert the catheter through the urethral meatus
Rationale: Relaxation of the external sphincter aids catheter insertion

32. Inflate the balloon of the indwelling catheter with sterile water to the volume indicated by the manufacturer
Rationale: Occlusion of the drainage eyelet, irritation of the bladder wall, and bladder spasms can result if the balloon is underinflated or overinflated

a) While holding the catheter in place at the urethral meatus with the nondominant hand, take the end of the catheter with the dominant hand and place the catheter between the first two fingers of the non-dominant hand. Maintain a secure hold on the catheter with the non-dominant hand.
Rationale: Holding on to the catheter before inflating the balloon prevents catheter expulsion from the urethra
b) With the free dominant hand, connect the inflation syringe to the end of the catheter at the inflation valve and slowly inject the required amount of solution. Follow the manufacturer's instructions regarding the amount of fluid to use for ballon inflation.

c) If resistance is met when inflating the balloon or if the patient verbalizes or shows nonverbal signs of pain, the balloon may not be entirely in the bladder. Stop inflation; gently aspirate the fluid back into the syringe and advance the catheter slightly before reattempting inflation.
d) After inflating the balloon, pull gently on the catheter tubing until resistance if felt.
Rationale: Pulling until resistance is met ensures that the catheter tip is anchored and is positioned at the bladder neck

33. Connect the catheter to a large drainage bag or leg bag
34. Do not force connections and avoid workarounds per the organization's practice
Rationale: Forced connections or workarounds could indicate that the connection should not be made.
35. Trace tubing or catheter from the patient to point of origin (1) before connecting or reconnecting any device or infusion, (2) at any transition (e.g., new setting), and (3) as part of the hand-off process.
36. Place the drainage bag below the level of the bladder. Do not place the drainage bag on the side rails of the bed. Ensure that the tubing has no dependent loops or kinks.
Rationale: Correct positioning of the drainage bag prevents urine reflux into the bladder and ensures proper drainage by gravity. Dependent loops or kinks prevent the urine from draining. Hanging the bag on a side rail increases the risk for tension on the catheter and for the bag to be inadvertently raised above the level of the bladder.
37. Allow the bladder to empty completely unless the organization's practice restrict the maximal volume of urine that may be drained with each catheterization.
Rationale: Complete emptying relieves bladder distention. Some organizations limit the amount of urine that may be drained with catheterization. However, definitive evidence showing benefits from limiting maximal volume drained is not available.
38. Anchor the indwelling catheter.
    a) Secure the catheter tubing with a tube holder or securement device as recommended by the manufacturer. Tape may also be used to secure the catheter.
    Rationale: Securing the catheter minimizes accidental dislodgment and the risk for bleeding, trauma, meatal necrosis, and bladder spasms caused by pressure and traction
    b) If retracted, replace the foreskin over the glans penis
    c) Create slack when securing the catheter so that movement does not create tension on it.
    d) Clip the drainage tubing to the edge of the mattress
39. Ensure that the tubing has no obstructions. Coil any excess tubing on the bed and fasten it to the bottom sheet with a clip from the kit.
40. Palpate the bladder for distention.
41. Assist the patient to a comfortable position. Lower the bed and return the side rails to the original positions.
42. Ask the patient to describe his comfort level
43. Observe the characteristics and amount of urine in the drainage system
44. Verify that no urine is leaking from the catheter and tubing connections
45. Discard supplies, remove gloves, and perform hand hygiene
46. Maintain an accurate I&O record

47. Notify the practitioner about unresolved pain and obtain an order for pain relief as needed. Treat pain per the practitioner's order
48. Document the procedure in the patient's record

URINE COLLECTION WITH AN INTERMITENT (STRAIGHT) CATHETER

1. Perform hand hygiene
2. Introduce yourself to the patient
3. Verify the correct patient using two identifiers
4. Explain the procedure to the patient and ensure that he agrees to treatment
5. Verify the practitioner's order and assess the patient for pain
6. Prepare an area in a clean, convenient location and assemble the necessary supplies
7. Once the catheter is in the bladder, as indicated by the flow of urine, allow urine to drain form the end of the catheter into the sterile urine receptacle
   Rationale: The aim is to fully drain the bladder and maintain the catheter in the bladder as long as necessary
8. Hold the catheter in the nondominant hand as urine continues to drain to prevent early removal of the catheter
9. Collect a urine specimen per the practitioner's order by holding the end of the catheter in the dominant hand over the specimen container. After collection, allow the remaining urine to flow into a container. Use a sterile container if additional urine is needed for culture analysis.
10. Withdraw the catheter slowly and smoothly, while gently palpating over the patient's bladder with the nonsterile (nondominant) hand.
    Rationale: Palpation allows the nurse to assess for completer emptying of the bladder
11. In the presence of the patient, label the specimen per the organization's practice
12. Prepare the specimen for transport
    a) Place the labeled specimen in a biohazard bag
    b) If the specimen requires ice for transport, place the specimen in a biohazard bag, then place the bag with the specimen into a second biohazard bag filled with ice slurry
       Rationale: Placing the specimen in a separate bag protects the label from being damaged.
13. Transport the specimen to the laboratory immediately after leaving the patient's home
    Rationale: sending the specimen immediately to the laboratory helps ensure accurate results
14. Pour the urine from the receptacle into a graduated cylinder to measure. Record the amount of the sterile specimen container as well.
    Rationale: Recording all of the urine removed provides an accurate measurement of urine output
15. Assist the patient to a comfortable position. Lower the bed and return the side rails to the original position
16. Ask the patient to describe his comfort level
17. Observe the characteristics and amount of urine
18. Discard the urine in the toilet and clean the collection container
19. Discard supplies, remove gloves, and perform hand hygiene
20. Maintain an accurate I&O record

21. Notify the practitioner about unresolved pain and obtain an order for pain relief as needed. Treat pain per the practitioner's order.
22. Document the procedure in the patient's record

PATIENT AND FAMILY TEACHING

- Explain the procedure to the patient and how he can participate and cooperate during the procedure
- Explain to the patient that burning and pressure sensations during catheter insertion are normal
- Instruct the patient and caregiver on how to identify the size of the catheter and balloon
- Explain to the patient and caregiver the reason for catheter placement, the anatomy of the genitourinary tract, and the steps involved in catheter insertion.
- Teach the patient how to position the catheter tubing while in bed
    - When the patient is in the side-lying position facing the drainage system, the tubing should drape over the thigh
    - When the patient is in the side-lying position facing away from the drainage system, the tubing should extend between the legs
- Teach the patient and caregiver how to care for the catheter and drainage system
- Instruct the patient and caregiver on the importance of adequate fluid intake to dilute urine and prevent catheter blockage
- Teach the patient and caregiver proper hand hygiene
- Teach the patient and caregiver proper insertion techniques for intermittent catheters to minimize CAUTIs
- Teach the patient and caregiver the signs and symptoms of a UTI to report to the nurse or practitioner
- Instruct the patient and caregiver to observe for signs of bladder leakage or bypassing and to report these signs.
- Instruct the patient and caregiver on emergency catheter removal
- Teach the patient and caregiver how to change the urinary drainage bag
- Instruct the patient and caregiver to keep the catheter and drainage bag tubing free of kinks
- Teach the patient and caregiver how to empty the urinary drainage bag and how to measure urine output
- Instruct the patient and caregiver to keep the drainage bag below the level of the bladder and off the floor at all times
- Instruct the patient and caregiver to use a large drainage bag at bedtime and to use a leg bag when ambulating
- Teach the patient and caregiver how to order and store catheters and supplies
- Instruct the patient and caregiver on the need to maintain a closed catheter system whenever possible. If the patient changes from a leg bag to a large drainage bag, teach the importance of washing the hands and cleaning the connection ports with alcohol before changing bags
- Teach the patient and caregiver about the daily care of collection bags
    - Cleaning methods vary, but the most commonly recommended cleaning agents are one-part vinegar to three parts water, or one tablespoon of bleach in 4 ounces of water. Place the cleaning solution in the drainage bag, agitate briefly,

and allow it to soak for 20 minutes before emptying the bag and letting it air-dry. Instruct the patient to wear gloves and avoid eye contact with the solution.
    - Inform the patient and caregiver that bleach can be damaging to clothing and irritating to the skin and eyes
- Encourage questions and answer them as they arise

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ADDITIONAL READINGS

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