39 Urinary Catheter Care

Teaching Plan

To use this lesson for self-study, the learner should read the material, do the activity, and take the test. For group study, the leader may give each learner a copy of the learning guide and follow this teaching plan to conduct the lesson. Certificates may be copied for everyone who completes the lesson.

Learning objectives

After this lesson, participants should be able to:

- Identify three types of urinary catheters
- Describe three signs and symptoms of a catheter-associated urinary tract infection (UTI)
- List three things that should be considered when performing catheter care
- Understand the importance of proper care of patients with indwelling urinary catheters

Lesson activities

1. Show your team how various types of urinary catheters function
2. Invite an infection control nurse to talk with your team about catheter-associated infections, the prevalence in home health settings, and measures to prevent infections
3. Visit the following websites:
    - National Association for Continence (NAFC) at *www.nafc.org*
    - The American Urological Association (AUA) Foundation at *www.urologyhealth.org*
    - Wound, Ostomy, and Continence Nurses Society at *www.wocn.org*
4. Have participants use Figure 39.1 to match types of catheters with their descriptions.

Conclusion

Have participants take the test. Review the answers together. Award certificates to those who answer at least seven (70%) of the test questions correctly.

Test answers

1. c
2. a
3. d
4. d
5. d
6. b
7. b
8. a
9. c
10. d

Urinary Catheter Care

Contents:

- Understanding the bladder and need for catheters
- Types of urinary catheters
- Common problems associated with catheter use
- Catheter care and maintenance
- Emptying the collection bag

The use of urinary catheters in the home setting is not uncommon. For patients with urinary retention, the use of intermittent catheterization or an indwelling catheter is an appropriate treatment option. In some cases, patients with urinary incontinence may benefit from short-term use of a catheter if they have a stage III or stage IV pressure ulcer in an area that would be exposed to urine if the incontinence were managed with another modality. Other indications for catheter use include monitoring urinary output in postoperative or severely ill patients and managing incontinence in terminally or severely ill patients that experience pain with movement.

Home health staff members are in a position to observe and report potential catheter-related problems early and hopefully prevent the patient from experiencing significant complications.

How the Bladder Works

The kidneys are responsible for filtering waste products from the blood and producing urine for elimination from the body. Ureters, small tubelike structures, take the urine form the kidneys to the bladder. The bladder is a balloon-shaped organ that is made of muscle that can stretch and contract. The bladder is responsible for storing urine (muscle stretches to hold urine) and eliminating urine (muscle contracts to force urine out of the body).

The urine travels from the bladder through the urethra, a tubelike structure, to exit the body. Muscle fibers called a sphincter wrap around the urethra to keep urine in the bladder until nerves carry messages from the bladder to the brain to tell it when the bladder is beginning to feel full. The brain will alert the person that it is time to empty his or her bladder, and, at the same time, it will tell the sphincter muscles to remain closed until the person is able to get to the toilet. A normal bladder empties about four to seven times in 24 hours and does not leak urine.

Key Terms to Aid Your Understanding

- **Alkaline:** a term used to describe substances that rate above 7 on the pH scale.
- **Catheterization:** passage of a catheter into a body channel or cavity (e.g., the bladder).
- **Pressure ulcer:** an inflammation, sore, or injury to the skin and/or underlying tissue over a bony prominence, as a result of prolonged pressure. A stage III and stage IV pressure ulcer refers to the level of tissue damage that has occurred.
- **Sphincter:** the muscles surrounding the urethra that are used to control the flow of urine from the bladder. The muscles relax and contract; when they contract, the urethra is closed.

Why patients need a urinary catheter

In home health, the two most common problems causing a patient to need a urinary catheter are urinary incontinence (when the urine leaks and can't be controlled) and urinary retention (when the bladder doesn't empty completely). In some cases, the patient needs a urinary catheter to capture all urine output for measurement. For some conditions, the physician may need to know exactly how much fluid is going into the patient and how much urine is coming out. In all cases, a urinary catheter is used when there is not a more suitable treatment of the patient's condition, despite problems and risks that can occur with catheter use.

The urinary tract is a common source of bacteremia in patients with urinary catheters. UTI is one of the most common infections and is often related to an indwelling urinary catheter. This lesson will explain the proper way to care for patients with an indwelling urinary catheter.

Types of Urinary Catheters

There are various types of catheters available. The type utilized is based on the reason the patient needs catheterization and the patient's ability to self-manage his or her catheterization. A catheter can be placed in the bladder through the urethra and removed immediately following bladder emptying (in-and-out catheterization), placed into the bladder through the urethra and left in place for a period of time (indwelling catheter), or placed directly into the bladder through a surgical opening in the lower abdomen (suprapubic catheter). External or condom catheters are sometimes options for male patients.

Intermittent catheters are used with patients that cannot completely empty their bladder. The inability to empty the bladder completely is called urinary retention. The patient or caregiver briefly inserts the catheter into the bladder to drain the urine. Once the bladder is empty, the catheter is removed. A routine bladder-emptying schedule is determined based on the amount of fluid the patient typically drinks but usually no less than three to four times per day. Intermittent catheters are left in the bladder short term, which lowers the chance of infection.

Indwelling catheter

An **indwelling catheter** is often called a Foley catheter. The indwelling catheter is inserted by the home health nurse based on the physician's order. The catheter is inserted through the urethra into the bladder. The tip of the catheter is held in place with a water-filled balloon. The catheter is connected to drainage tubing and a collection bag. This type of catheter is used for patients with uncontrollable urine leakage (urinary incontinence) that is cause by a blockage in the urethra or urinary retention that cannot be treated with other methods. Patients with urinary incontinence who develop skin irritation or pressure ulcers (stage III or stage IV) may also benefit from the use of an indwelling catheter to prevent prolonged exposure to urine and promote healing. It is also used when the physicians and nurses need to measure urine output and the incontinence prevents accurate measurement. Terminally ill or severely impaired patients also may use a catheter when moving about is painful.

A **suprapubic catheter** is a type of indwelling catheter. Instead of inserting the catheter through the urethra, it is inserted into the bladder through an incision made in the abdomen just above the pubic bone. A suprapubic catheter may be used because it tends to be more comfortable for patients who need to have a catheter for an extended period of time. They create less risk for UTI than standard catheters. Some

problems unique to suprapubic catheters are uncontrolled urine leakage and skin irritation around the insertion site.

External catheter

External catheters, also called condom catheters, are available for male patients with urinary incontinence (unexpected urine leakage). Condom catheters are used to collect urine leakage. This catheter fits over the penis like a condom. External condom catheters attach to the penis with either a double-sided adhesive, a latex inflatable cuff, or a foam strap. In addition, adhesive-free catheters are held in place by a belt or special underwear. Once the external catheter is applied, it is attached to a urine collection bag by a tube. Patients who are in a chair and/or are otherwise mobile often prefer a smaller collection bag that can be attached to their leg. External catheters are typically disposable and need to be changed every 24 to 72 hours.

External collection devices exist for women. The devices are pouches or form-fitting cups that fit over the perineal area and are attached to the skin by adhesive or straps. The devices are seldom used, because they are uncomfortable for the patient and difficult to keep in place if the patient has any ability to move.

Common Problems with Catheter Use

Infection is the most common problem associated with the use of indwelling catheters. Bacteria (germs) grow in the urine. This is called **bacteriuria** (bacteria in the urine). As the number of bacteria increases, infection within the bladder and/or other parts of the urinary tract can occur. In the homecare setting, about 8% of patients with an indwelling catheter will develop a UTI.

Bacteriuria develops in most patients within two to four weeks after the catheter is inserted. Even with proper technique for catheter insertion and meticulous hygiene, bacteria may enter the bladder and contaminate the urine. Bacteria can enter from the point the urethra opens to the outside of the body and travel up the catheter or can travel up from the bag to the bladder from inside the catheter system or outside on the surface of the system.

Bladder spasms sometimes occur with indwelling catheters. The balloon that holds the catheter tip inside the bladder may cause the bladder to become irritable and spasm. The risk of spasm increases when the catheter is not properly secured and there is unnecessary movement of the catheter and balloon. The spasms may cause some urine to leak out, which could cause skin irritation due to exposure to urine. Bladder spasms resulting in a small amount of urine leakage are not a reason to worry unless the catheter leaks continuously or if there is little or no urine in the bag.

Indwelling catheters can become dislodged and/or be pulled out while the balloon at the end of the catheter is still inflated. If this occurs, the balloon can cause damage to the bladder and urethra as it passes out of the body. This can occur when the catheter is secured with too much tension placed on the tubing or can be accidently pulled out by a confused or ambulatory patient.

External (condom) catheters can also fall off or be pulled off by mistake, resulting in potential skin damage due to prolonged contact with urine. The stripping of the catheter off the penis may also cause skin damage or irritation.

Catheter blockage or obstruction is a serious problem that must be corrected immediately. Occasionally, the catheter gets clogged with **encrustations** (e.g., buildup of bacteria, protein debris, uric acid, or other particles in the urine) or a mucous plug. This causes a blockage of urine flow out of the bladder. The flow of urine can be partially or completely blocked. The blockage could cause increased pressure in the urinary tract, which can cause the bladder, ureters, and kidneys to distend (to swell out or expand). The increase in pressure and distention of the urinary tract can lead to permanent damage to the organs; therefore, it is important that diminished urinary output or absence of output be reported immediately to the home health nurse for further assessment and follow-up. Patients that tend to have encrustation often require more frequent catheter changes to avoid catheter obstruction.

Signs and Symptoms of Urinary Tract Infection

- Fever great than 100.4 degrees F
- Pain or burning in the area of the bladder
- Offensive urine odor
- Change in the appearance of the urine (e.g., cloudy, hematuria [blood in the urine], sediment particles)
- Change in mental status (e.g., confusion, especially in older adults)

A catheter is inserted into the bladder for the purpose of continuous urine drainage. This includes catheters inserted through the urethra or by suprapubic incision. It is a strong risk factor for infection; infection can lead to sepsis and even death.

Special Precautions

- Check the drainage bag to make sure the urine is flowing into the tubing and then into the drainage bag
- Check the area around the urethra for inflammation or signs of infection, such as irritated, swollen, red, or tender skin at the insertion site or drainage around the catheter
- Keep the urinary drainage bag below the level of the bladder
- Make sure the urinary drainage bag does not drag and pull on the catheter

Figure 39.1

Match the Catheter Description with Catheter Type

1. Used with patients that cannot completely empty their bladder.	a. suprapubic catheter
2. Often called a Foley catheter; inserted through the urethra into the bladder.	b. external catheters
3. A type of indwelling catheter. Instead of inserting the catheter through the urethra, it is inserted into the bladder through an incision made in the abdomen just above the pubic bone.	c. intermittent catheters
4. Also called condom catheters, are available for male patients with urinary incontinence (unexpected urine leakage).	d. indwelling catheter

Answer Key:

1. C
2. D
3. A
4. B

Home Health's Role

When caring for a patient with a catheter, your role is to provide comfort and support, promote dignity, and assist with personal hygiene. You play an important role in preventing problems associated with catheter use and can identify and report signs of potential problems, such as infection, for further assessment.

Reinforce proper fluid intake education

Ideally, your patient's urine should be clear and transparent and not cloudy or dark yellow. The best way to see these results is for the patient to drink at least 8–12 eight-oz. glasses of liquid per day. It is important to know if your patient has any fluid or diet restrictions (e.g., limit fluid to 1,000 cc per day, limit caffeine intake) prior to encouraging the patient to drink more.

Water is the preferred fluid. Tea and juice are also good choices for your patient to have some variety. Carbonated drinks should be avoided or taken in moderation because they make the pH of urine more alkaline, which can cause encrustation, stone formation, and bacterial growth. It is also important to remind patients that food such as Jell-O, ice cream, and soup are considered fluids and should be counted in their daily consumption.

Tips for fluid intake

Some suggestions to aid your patients in appropriate fluid intake include, but are not limited to:

- Keep a water pitcher or glass of water close at hand to the patient. Easy access to the glass of water will encourage your patient to drink throughout the day.
- For patients who do not typically drink water because they don't like the taste, encourage them to try adding lemon juice or other flavoring to water, use a water filter to get rid of some of the unpleasant taste, and keep the water cold (cold water tastes better than room-temperature water).

Perform catheter care and maintenance

It is important to follow your agency's policy and clinical procedure for performing routine catheter care. Regular catheter care is very important to prevent infection and other complications. The most important factor is keeping the insertion site clean; therefore, patients with catheters must continue with their

daily hygiene. If your patient is able to shower, he or she may do so without harm. Clean the body with soap and warm water as usual. You will not harm the catheter. The following are steps to consider when providing basic catheter care:

- Before cleaning the catheter, you should tell the patient what you are going to do. Explain that you are going to take care of the catheter to prevent infection and make sure it's working properly.
- Always provide privacy for the patient.
- Make sure you have good lighting so you can clearly see the catheter insertion site, the catheter, the drainage tubing, and the collection bag.
- Hand washing is the top defense against infection. You must always perform hand hygiene according to your agency's policy (wash with soap and water or use an alcohol-based hand sanitizer) before applying your gloves and after glove removal. If the patient performs any self-care, he or she must wash his or her hands before handling the catheter, tubing, or drainage bag.
- It is very important to keep the general perineal area clean. Wash the entire perineal area with warm soapy water. Rinse well and dry thoroughly. Reminder, for female patients, always clean from front to back, and for male patients, you may have to retract (pull back) the foreskin on the penis to see the urethra and clean thoroughly.
- Reinforce education to the patient and/or caregiver that perineal care should be done twice per day and following each bowel movement.
- Following perineal care, obtain fresh water and a clean washcloth to wash the catheter tubing. Firmly grasp the catheter to prevent tugging on it and gently wash the tubing with soap and water. Begin at the point the catheter enters the body and wash the first 2 to 3 inches of the tube, moving away from the body toward the drainage bag. Do not wash toward the body because this may push bacteria into the catheter insertion site. Gently remove any drainage or crusting that may be present on the tube. Gently dry the tubing.
- Do not apply powder or lotion around the catheter insertion site. The powder can become moist and cause irritation to the surrounding area and/or can provide an environment that enables bacteria to grow.
- Always inspect the catheter insertion site and report any redness, rash, swelling, irritation, or drainage.
- Always inspect the drainage system to ensure there are no leaks, kinks in the tubing, encrustations forming inside the tubing, or anything else that may seem unusual for the patient. It is important that urine can always flow freely from the bladder.

- Inspect the urine drainage. Look for any mucus, blood clots, or other sediment in the tubing. If you notice any of these things, you should notify the care team and follow up as warranted.
- Properly position the collection bag to make certain the urine is always flowing downhill. This can be accomplished by positioned the collection bag below the level of your patient's bladder at all times. This is important whether the patient is sitting, standing, lying down, or walking. Do not place the bag on the floor because of the risk of bacteria getting on the bag and moving up the tubing to the body.
- Never pull or tug on the catheter. It is important to stabilize the catheter to avoid any tensions or pulling that could cause the catheter to come out of the bladder and/or cause bladder irritation or spasms. For female patients, the catheter is typically secured to the inner thigh. For male patients, the catheter can be secured to the lower abdomen when lying in bed or the thigh when sitting in a chair or walking.
- For external (condom) catheter application, wash the penis with soap and warm water, rinse, and dry with a towel. If needed, apply a skin protectant, and allow to dry. Leave the foreskin in its natural positions during application of catheter. (Tip for catheter removal: briefly soaking the penis with a warm washcloth will loosen the adhesive.)

Application Tips for External Catheters

- Always follow the manufacturer's instructions for application.
- Ensure the penis is completely dry before attempting application, as moisture (e.g., water, lotion, cream) can prevent catheter adhesion.
- Long pubic hairs may interfere with catheter application and/or skin adhesion, so trimming should be considered. Do not shave the pubic hair due to the risk of skin irritation.
- Do not use adhesive tapes unless supplied with the catheter. Adhesive bands and/or tape designed for catheter adhesion allow for flexibility and expansion, which minimizes the risk for constriction of the penis and/or obstruction of urine flow.
- Secure the catheter tubing in a manner that prevents twisting or kinking of the catheter tip at the point it connects to the draining tubing.

Emptying the collection bag

The collection bag should be emptied as often as needed but at least every 8 to 12 hours. If using a leg bag, it should be emptied more often, about every 3 to 4 hours. For some patients, you may be required to measure and record the amount of urine collected. Normally, adults make 1 to 2 quarts of clear, yellow urine per day.

To empty the bag, you will need disposable gloves, a container to collect the urine, and alcohol swabs. Because you will be opening a port on a close drainage system, it is important to follow these guidelines to minimize the risk of bacteria entering the system:

1. Wash your hands with soap and water or use alcohol-based hand sanitizer according to your agency's policy.
2. Put on disposable gloves.
3. Remove the drainage tube from the holder on the collection bag. Point the drainage tube into the container.
4. Unclamp (open) the drainage tube.
5. Drain the urine into the collection container. Do not allow the end of the tube to touch any surface.
6. Reclamp (close) the drainage tube.
7. Clean the tip of the drainage tube with the alcohol swab.
8. Reinsert the drainage tube into the holder on the collection bag.
9. If specified, document the amount of urine as output.
10. Discard the urine into the toilet.
11. Rinse the container that contained the urine, or dispose of it according to your agency's policy.
12. Remove and discard gloves.
13. Wash your hands with soap and water or use an alcohol-based sanitizer according to policy.

Offer comfort and support

You play an important role in helping the patient feel comfortable and accepted. Patients often feel a sense of loss when they require a catheter (long-term or short-term) for elimination of urine instead of going to the toilet as they have done in the past. Because of the type of care you provide, patients tend to establish a close bond with those who help take care of the catheter. This positions you to use this relationship to provide comfort and support and aid them in maintaining their dignity.

Observe and report

Patients with a urinary catheter are at risk for a number of complications that can cause long-term damage to the urinary tract unless they are quickly recognized and corrected. If you notice any of the following, you should notify your care team:

- Signs and symptoms of a possible UTI.
- Change in urine characteristics (e.g., change in color, cloudy, presence of sediment, hematuria).
- Decrease in the amount of urine output could indicate the patient is not drinking enough or there may be something in the catheter blocking urine flow.
- Absence of urine output must be reported immediately. It could indicate a complete blockage of urine flow, which can be life-threatening.
- Changes around the catheter insertion site (e.g., skin irritation, redness, rash, swelling, drainage).
- Changes in the amount of mucus or sediment buildup on the inside of the drainage tubing.

TEST Urinary Catheter Care

Name _____ **Date** _____ **Score** _____

Directions: Circle the correct answer.

1. **In home health, what is one of the most common problems causing a patient to need a urinary catheter?**
   a. Excessive urine output
   b. Damaged kidneys
   c. Incomplete bladder emptying
   d. Lack of caregiver

2. **Indwelling and external catheters are two types of urinary catheters.**
   a. True b. False

3. **What is the most common problem associated with indwelling catheter use?**
   a. Encrustation in the catheter
   b. Leaking from the insertion site
   c. Tripping over the tubing
   d. Urinary tract infection (UTI)

4. **What frequency should the patient with an indwelling catheter perform perineal care?**
   a. At least daily and when experiencing discomfort
   b. Following every shower or sponge bath
   c. The same frequency to prior to receiving the catheter
   d. Twice daily and after each bowel movement

5. **Which of the following is part of routine catheter care?**
   a. Avoid using soap near the catheter insertion site
   b. Clean the catheter tubing with an up-and-down motion 2 to 3 inches from the insertion site
   c. Gently pull or tug on the catheter to be sure it is securely in the bladder
   d. Secure the catheter tubing to the female patient's thigh

TEST Urinary Catheter Care (cont.)

6. **When applying an external catheter, you should gently retract the foreskin to completely expose the urethral opening in the penis.**

   a. True b. False

7. **What are the signs and symptoms of urinary tract infection?**

   a. Excessive urine output, burning, and clear, yellow urine

   b. Fever greater than 100.4°F, blood in the urine, and offensive urine odor

   c. Change in mental status, decreased urine output, and bladder spasms

   d. Sediment in the urine, redness around the insertion site, and urine leakage

8. **Adequate fluid intake is an important consideration for patients with a urinary catheter.**

   a. True b. False

9. **What should home health staff do while emptying the collection bag to minimize the risk of infection?**

   a. Hold the bag higher than the level of the bladder to ensure proper drainage

   b. Clamp the tubing and remove the collection bag to drain contents into the toilet

   c. Clean the drainage tube with an alcohol swab prior to placing it back in the sleeve (holder)

   d. Place the end of the drainage tube against the bottom of the collection container

10. **Which of the following is an area in which home health staff can have a positive effect while caring for a patient with a urinary catheter?**

    a. Observing for signs and symptoms of a UTI

    b. Encouraging fluid intake of at least 8–12 glasses per day

    c. Providing assistance with personal care

    d. All of the above