

Peripherally Inserted Central Catheter Care

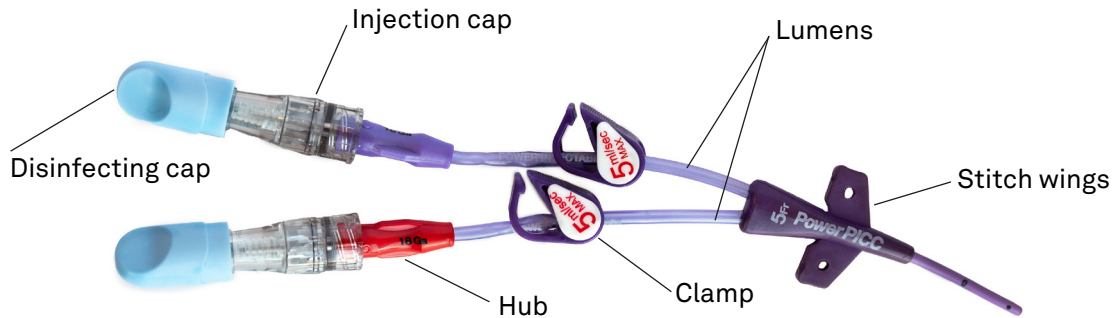
A peripherally inserted central catheter (PICC) line is an IV (into the vein) line that goes to large veins near the heart. A clinician can give you medication and fluids through the PICC while you are in the hospital or at home. They can give you IV antibiotics, pain medication, chemotherapy, nutrition through the PICC or draw blood samples from it. Be sure to tell all your physicians that you have a PICC.

If you have questions about caring for your PICC, talk with your physician or nurse.

How it works

The PICC is made from a soft, plastic material. This makes the catheter flexible. The catheter is long and narrow and is inserted into a vein above the bend of your arm. The PICC has a plastic adapter or hub, a plastic clamp and stitch wings that attach to your skin so the catheter does not fall out (Figure 1). An injection cap connects to the hub or end of the catheter. This allows fluids or medications to flow into the catheter and prevents blood from coming out. The PICC can have either 1, 2 or 3 openings (lumens). This depends on how many medications you will receive at home. This catheter can be left in your arm for several weeks or months, depending on your therapy needs. When your therapy is complete, your care team will remove the PICC.

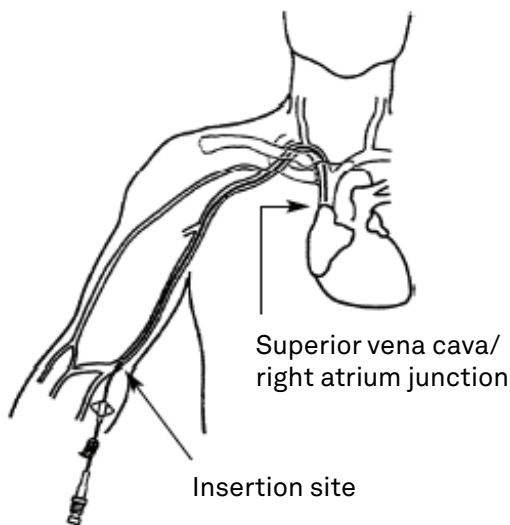
Figure 1. Double lumen PICC



Placement

A trained (certified) registered nurse will insert the catheter in the Interventional Radiology (IR) Department of the hospital or at the bedside. A local anesthetic numbs the skin so that the insertion is not painful. The clinician will position the tip of the catheter into a vein (superior vena cava) near your heart (Figure 2). They will place a suture (stitch) or a securing device to hold the catheter in place. They will cover the site with a clear bandage. You will have an X-ray taken to make sure the PICC is in the right place. You may have a small amount of bleeding at the site. A nurse will change the bandage as needed. This is normal and should not restrict your activity. You may have some discomfort at the catheter site for 1 to 2 days.

Figure 2. PICC position



Caring for your PICC at home

Follow these instructions when caring for your PICC at home.

Preparing the work area

Tables and surfaces in your home normally have dust and some germs. The tabletop or surface you will use to set up your IV fluids or medications should be clean and dry. Choose a work area away from household traffic and distractions, if possible.

- › Choose a work surface such as a tray, TV tray table, countertop or table.
- › If the surface is washable, clean it with soap and water. Dry it with a clean towel or paper towel.
- › If the surface is not washable, wipe it free of dust and spread a clean towel or paper towels over the surface.
- › Avoid coughing or sneezing on the clean surface.
- › Keep pets out of the room.

Hand-washing

Before touching the catheter or your supplies, wash your hands carefully to remove bacteria. This helps prevent infection. Use any brand of antibacterial liquid soap.

1. Turn on the water.
2. Wet your hands and wrists.
3. Squirt the soap into your hands. Lather well.
4. Rub your hands on all surfaces: palms, backs of your hands, fingers and between your fingers.
5. Scrub your hands for 20 to 30 seconds.
6. Rinse your hands by holding them with your fingers pointing up. This lets the dirty water run down from your fingers to your wrists.
7. Dry your hands with a clean towel or paper towel. Turn off the water using the towel. Do not touch the faucet with your clean hands.

Once you have washed your hands, do not touch anything except your catheter and supplies. If you touch anything else, such as the telephone or furniture, wash your hands again.

Preparing the supplies

PICC supplies are packaged to keep out bacteria. Keep germs and dirt off these supplies.

- › Inspect all the supply packages. Make sure they all are sealed and dry.
- › Inspect all IV fluid bags for leaks or damage.
- › Check the bags, packages and bottles for expiration dates. Do not use the item if the expiration date has passed. Call the supply company and reorder the item. Throw away any expired supplies.
- › **Important: Do not let an uncapped syringe tip touch anything except the injection cap where it will be inserted. If it does, germs can get into the catheter. If the syringe tip touched anything, throw it away and use a new one.**
- › Place all supplies on a clean surface before using.

Flushing the catheter

Your care team should show you how to flush your catheter. Follow the instructions for preparing the work surface and supplies, and washing your hands as described above. Follow the steps below to flush **all** lumens through the injection caps.

Purpose: To keep the catheter free from blood clotting.

Frequency: Flush each lumen through the injection cap 2 times a day or after each infusion of medication or fluid into the catheter.

Supplies

- › Chlorhexidine gluconate (CHG) or alcohol wipe
- › 1 pre-filled 10 milliliter (mL) saline syringe for flushing each lumen.
- › 1 “sharps” container for syringe disposal. Talk with your care team about the right way to throw away sharps (needles).

Procedure

Read the label for the saline syringe. Make sure it has not expired.

1. Clean the table or work area.
2. Gather supplies.

3. Wash your hands carefully with soap and water (gloves are optional). If you do not have access to soap and water, use an alcohol-based hand gel. The gel should have at least 60% alcohol. Let the hands air dry.
4. Unclamp the 1st lumen.
5. If your PICC line has a disinfecting cap on the end, take it off and throw it away. **Do not remove the injection cap.**
6. If your PICC does not have a disinfecting cap, scrub the end of the injection cap with a CHG wipe or alcohol wipe for 15 seconds. Let it dry for 15 seconds.
7. Remove the saline syringe cap. Be careful not to touch the uncapped syringe tip.
8. Insert the tip of the saline syringe into the injection cap. Then turn the syringe clockwise to secure it into the cap.
9. Slowly inject the saline into the PICC. Inject the entire 10 mL.
10. Remove the syringe by turning it counter-clockwise to release it from the cap. Do not remove the injection cap at the end of the catheter.
11. Place a new disinfecting cap on the injection cap.
12. Clamp the lumen.
13. Put the empty saline syringe into a “sharps” container. **Never** use a syringe more than 1 time.
14. Repeat these steps for all other lumens, if present.

Aseptic technique

If bacteria enter your catheter or the catheter insertion site, you can get a blood infection and become very ill. Using aseptic technique prevents germs from getting into your supplies or catheter and entering your body. Follow the guidelines below to protect yourself.

- › Never cover or soak the catheter in water. Do not swim.
- › Take extra care when showering or taking a tub bath to keep the bandage dry.
 - You may buy a reuseable “PICC line shower sleeve” to cover the whole PICC line and bandage.
 - Otherwise, you can use a plastic wrap to cover the whole bandage and PICC line. Be sure to secure all edges with tape, but do not let the tape stick to the bandage under the plastic wrap. This prevents the bandage from coming off when you take the plastic wrap off.

- › Clean the work area very carefully and wash your hands before any catheter care.
- › Keep your supplies in their packages until you are ready to use them.
- › Store the supplies in a clean, dry place away from children and pets.

PICC bandage and injection caps

To prevent infection, you need to properly care for the bandage that covers your PICC site and the injection caps at the end of the catheter hubs. Your nurse will change your bandage and injection caps every week using sterile technique. They can do this in the clinic or your home health nurse can do it in your home.

Check your bandage to make sure it stays secure.

If your bandage becomes soiled, wet or loose, call your home care nurse, clinic or physician right away to arrange for a sterile bandage change.

Possible PICC-related problems

Skin infection

Watch for signs of infection of the skin around the catheter.

Signs/symptoms: The skin may become red or swollen. You may see pus or drainage around the catheter insertion site. You may have pain or tenderness at the catheter site.

Action: Take your temperature. Call your nurse or physician right away, even if your temperature is normal (98.6 degrees F).

Blood infection

Bacteria can enter the catheter if you do not wash your hands properly and follow aseptic technique. This can cause a blood infection. Careful hand-washing and proper care of your catheter is very important.

Signs/symptoms:

- › Fever and chills.
- › A temperature 100.4 degrees F (38 degrees C) or higher, or as directed by your clinician.

Action: **Go to the nearest emergency department.** Then call your physician right away.

Prevention: **Always** follow these guidelines:

- › Wash your hands before handling the catheter.
- › Follow the care instructions.
- › Check the expiration dates of your supplies.
- › Keep your bandage dry with a tight seal.

Occluded (blocked) catheter

Signs/symptoms: You cannot flush saline through a catheter lumen.

Action:

- › Make sure the catheter lumen is unclamped.
- › Raise your arm with the PICC line above your head.
- › Turn your head and cough.
- › Turn your head to the opposite side of the PICC line.
- › If it is still not working, clamp the catheter lumen. Call your nurse or physician.

Prevention: Always flush your catheter with saline after each use or 2 times a day if the catheter has not been used. Never force the fluid, as you may damage the catheter.

Air in the catheter

Air may enter the catheter from:

- › A loose connection
- › A hole in the catheter
- › The injection cap falling off
- › Incorrect clamping of the catheter lumen when changing the cap

Signs/symptoms: You begin having shortness of breath, dizziness, light-headedness or chest pain.

Action: Clamp the catheter lumen. Lie down flat on your left side. **This is an emergency. Call 911.**

Prevention: Make sure the catheter is clamped when not in use.



Never loosen or remove the injection cap at the end of the PICC.

Never use sharp items such as scissors, knives or pliers near your catheter.

Leakage of fluid from the injection cap

Signs/symptoms: You see blood or fluid inside the injection cap or lumen. Blood or fluid is leaking out.

Action: Tighten the injection cap securely. Flush the catheter with saline and clamp the lumen. If leakage continues, contact your home care nurse or physician for instructions.

Accidental tearing of the catheter

Signs/symptoms: Blood or fluid is leaking from the catheter. The catheter is damaged.

Action: Immediately clamp or pinch the lumen above the hole or tear close to point where the catheter enters your arm. **Go to the nearest emergency department.** Then call your physician right away.

Prevention: **Never** use sharp items such as scissors, knives or pliers near your catheter.

Central vein thrombosis

This is a blockage in a vein leading to the heart. It is caused by a blood clot around the catheter.

Signs/symptoms: You have pain or swelling of the neck, arm, shoulder or face on the same side as your catheter.

Action: **Go to the nearest emergency department.** Then call your physician right away.

Be sure to always follow any follow-up instructions your care team gives you after your PICC insertion.

Contact your home care nurse or the physician who ordered your therapy if you have any questions or concerns.



Resources and contact information

Northwestern Memorial Hospital

General information: 312.926.2000 (TTY: 711)

Your physician: _____

Home care nurse: _____

PICC supply company: _____

For more information about Northwestern Medicine, please visit our website at **nm.org**.