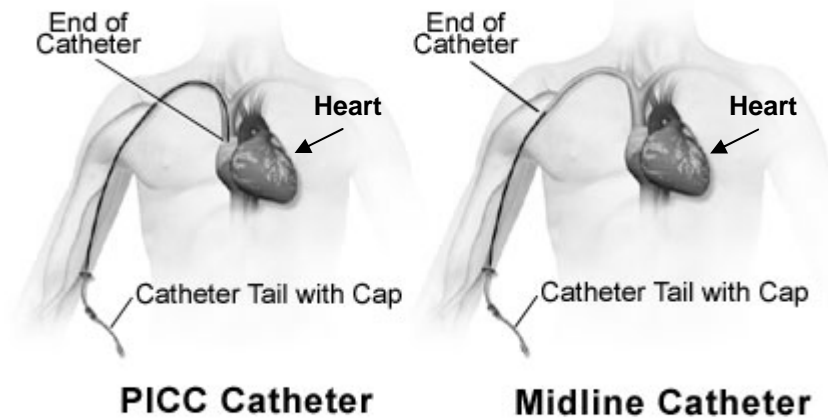


CARING FOR YOUR PICC OR TUNNELED CENTRAL LINE AT HOME

This handout tells you about an intravenous (IV) central line that your doctor has ordered for you or your child. This is a small flexible plastic tube that can be used to give certain IV fluids, IV medicines or blood, or to get blood samples. Your doctor will make arrangements for the central line to be removed when you no longer need it. Arrangements will be made for the supplies needed to care for your central line. You, your child or your caregiver will learn to take care of the central line. Be sure you ask questions and are comfortable with caring for your central line before you go home. **Be sure you are given the identification card that explains what type of central line you have. Always carry the card with you.**

1. Midline catheter or peripherally inserted central catheter (PICC).

These central lines are put into a vein usually on the inside of your arm. A midline goes up your arm towards the shoulder. A PICC line goes past the shoulder to the large veins near your heart. Sometimes other sites like a vein in your neck are used.

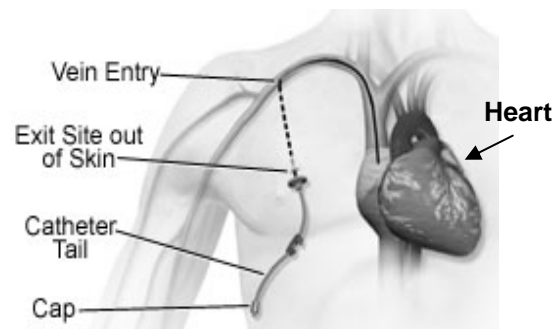


PICC Catheter

Midline Catheter

2. Cuffed (tunneled) central line.

This central line is tunneled, or placed under the skin, away from the vein to a place where it comes out from under the skin. The part of the central line that is tunneled has a small Dacron® or nylon cuff around it to help hold the catheter in place around your skin and to help prevent infection. You may have 1 to 3 small tails (also called tubes or lumens) hanging out from where the central line was put in.



Tunneled Central Line

Illustrations from Micromedex® Carenotes® and Thomson Reuters 2010.

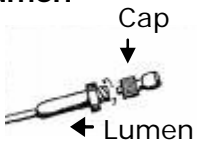
QUESTIONS ABOUT YOUR CENTRAL LINE

- If your line was placed in Angio Interventional Radiology, call 434-924-9401 9am-5pm Monday-Friday. After 5pm and on weekends call 434-924-0000 and ask for the Angio Interventional Radiology Fellow on call.
- If your line was placed in the Operating Room by the Pediatric Surgeons, call 1-800-251-3627 during office hours and request to be transferred to your surgeon's office. After office hours, please call (434) 924-0000 and ask for the Pediatric Surgeon on call.

What if your home health company tells you to do something different or has different supplies? Your home care company may have slightly different procedures. UVA has developed these procedures based on evidence-based research that aims to decrease and hopefully eliminate the chance for blood stream infections related to central line care. Please discuss with your home care provider to determine the safest procedure for you or your child. Be sure to review this handout, especially the central line safety tips, the troubleshooting chart and the "4 C's".

Call your doctor or healthcare provider for all other questions.

DEFINITIONS

| | |
|---|---|
| Bloodstream Infection | <p>A bloodstream infection is an infection in the blood that can occur when bacteria or other germs travel down a central line and enter the bloodstream. It is important to learn how to care for the central line correctly and learn signs and symptoms of an infection (redness, swelling, drainage, odor, pain at site or a fever). Call your doctor right away if you notice any of signs of infection.</p> |
| Cap | <p>A small, removable plastic piece on the end (hub) of the central line that screws into place. The cap keeps blood from coming out of and allows IV medicines into the central line, and prevents the central line from leaking or allowing air or bacteria into the bloodstream. It must be kept on the end of the central line at all times for safety reasons. Always scrub the cap well with alcohol as instructed before each use.</p> |
| Central Line | <p>A soft tube or catheter which goes into a vein through the skin and allows IV fluid, IV medications or blood to run in and out. There are different types of central lines. Only give IV medications in the central line once instructed by your healthcare provider. Always wash your hands before touching the central line.</p> |
| Clamp | <p>The plastic piece on the central line that snaps or slides, to open or close the central line, and serves as a safety device when IV fluids or IV medications are not infusing. Always keep the central line clamped when not in use.</p> |
| Clean technique | <p>Washing hands before and after any contact with the central line or supplies.</p> |
| Dressing | <p>Specially designed sterile cover for the exit site of the central line to keep it clean.</p> |
| Entrance Site | <p>The place where the tunneled central line enters the vein.</p> |
| Exit Site | <p>The place where the tunneled central line or PICC comes out from the skin. This area needs to be covered completely with a dressing that is clean and dry.</p> |
| Heparin | <p>An IV medicine used to help slow the clotting of blood in the central line. Called a heparin flush or heparin block, which means the heparin will fill and stay in the central line until it is flushed again. Usually heparin is in a prefilled, needleless syringe.</p> |
| Intravenous (IV) therapy | <p>Giving IV medicine, IV fluid or blood into the veins.</p> |
| Lumen  | <p>The inside of the central line that allows IV fluid, IV medicines or blood to go through it. Sometimes you have more than one lumen. Each lumen is a separate tube and should be treated like a separate line and gets flushed daily as instructed. Each lumen should have a cap on the end at all times.</p> |
| Normal Saline | <p>Normal Saline or 0.9% Sodium Chloride solution is given daily to clear the central line of IV medicines or blood. Called a normal saline flush. It is also given before and after any IV medications or IV fluids. Usually the saline will be in a prefilled, needleless syringe.</p> |
| Sterile technique | <p>The word sterile means “free from germs.” Sterile technique is an important way to care for your central line that helps prevent infection. Don’t touch any sterile items without sterile gloves on. You will learn how to follow sterile procedure when doing dressing changes for your central line.</p> |
| Vein | <p>A vessel which carries blood back to the heart from the rest of the body. Central lines are inserted into veins so IV medications, IV fluid or blood can be given.</p> |

CENTRAL LINE SAFETY TIPS

- 1. Preventing Bloodstream Infections: What you need to know:**
 - Germs can enter your bloodstream through the central line and can cause an infection.
 - If you have a fever over 100.5°F or the skin around the central line becomes red or painful, call your doctor right away.
 - Before you or anyone else touches the central line, wash your hands or put on clean gloves.
 - The area under the dressing should never be touched without sterile gloves.
 - If the bandage over the central line gets wet, dirty, or falls off, it needs to be changed right away.
- 2.** Always keep the central line or IV tubing secured and away from dirty surfaces. If the central line is for your infant or small child, please be sure they cannot chew on it and it does not hang into the diaper area. Do not allow anyone to play with or pull on the central line. Hands and pets carry germs and germs in the central line cause bloodstream infections.
- 3. Store all supplies and medicines safely out of the reach of children.** Dispose of used supplies in a closed trash container. Small pieces are a choking hazard. **Never reuse syringes, needles or any other supplies. Do not use any supplies that have been dropped on the floor.**
- 4.** Some IV medications need to be kept in the refrigerator- check with your doctor, nurse or pharmacist.
- 5.** The exit site needs to be completely healed before showering or bathing; please check with your doctor or health care provider. The central line dressing should not get wet; if it does you need to change it right away. Please check with your doctor or healthcare provider before swimming.
- 6.** It is okay to travel with a central line. Be sure to have enough supplies on hand (plus a few extra) and carry your central line identification card at all times. The person with a central line may be left with another caregiver, go to school or return to work. The caregiver should learn safety tips and have access to the troubleshooting chart and emergency contact numbers.
- 7.** Never use scissors near central lines.
- 8. Be sure to tell all healthcare providers you have a central line and carry your identification card with you at all times.**

CARING FOR THE CENTRAL LINE AT HOME (THE 4 C's)

- 1. Keep the site COVERED**

The area where the central line exits the skin should ALWAYS have a sterile dressing on it that is clean, dry, completely covered and taped securely to skin. Change the dressing right away if you notice it is dirty, wet or loose.
- 2. Keep the site CLEAN**

Always wash your hands before doing anything with the central line or the site. Wear gloves as instructed. Change the dressing and clean the site regularly as instructed below. When the site is cleaned regularly, the number of bacteria on the skin drops, and the risk for infection from the skin is much less. Do not put any ointments at the insertion site or under the dressing, as these may increase the number of bacteria on the skin and increase your risk of infection. Do not touch the area under the dressing without sterile gloves on.
- 3. Keep the line CLAMPED**

There are clamps on each lumen. **Clamps should always be closed when not in use.** If the cap comes off, having the central line clamped will prevent any air from getting in the blood and will prevent the backflow of blood into the central line, which may cause the central line to clot. **Always be sure the central line is clamped before you connect or disconnect an IV syringe or tubing or remove or change a cap.**
- 4. Keep the ends CAPPED**

Caps allow you to access the central line and give IV medicines, IV fluids or remove blood. Caps keep germs from being flushed from outside directly into the blood. **Always keep a cap on the end of each lumen. Always scrub the cap well with alcohol as instructed before each use.**

CHANGING THE CENTRAL LINE DRESSING AND CAPS

- **Change dressing every 7 days or as instructed or if dressing becomes wet, loose, or dirty.** A loose bandage is as bad as no bandage at all, and a dirty or wet bandage can attract bacteria and germs and cause infection.
- **Change caps at least every 7 days or as instructed after blood draws, after IV tubing changes and if you see blood in the cap.**
- **Changing the dressing is a “sterile” procedure.** Sterile technique is an important way to care for the central line that helps prevent infection. Home health companies will give you a central line dressing change kit that is wrapped in paper. The inside of the paper and all the supplies in it are sterile. Don't open any packages until you are ready to change the dressing, and make sure you have a clean surface to work on (wipe down with soap and water or alcohol). If you open the kit carefully, touching the outer edges and not touching the inside of the wrapper, and lay it on a table with the inside up, and the kit in the center, you now have a sterile working area. Do not touch the inside of this area unless you have on sterile gloves. Sterile things can touch each other. If something sterile touches something non sterile, it is no longer sterile. You may touch the outside of the wrapper of the gloves to pick it off the sterile field and put it down elsewhere so it is easier to put on your sterile gloves. Your nurse will show you how to do this.

HOW TO CHANGE THE CENTRAL LINE DRESSING:

Supplies you will need:

- Hand sanitizer (or soap and water to wash hands)
- Non-sterile exam gloves
- You may need extra pieces of tape to secure the end of the lumens if they are long
- Standard central line dressing change kit: Chloraprep® applicator, cover dressing, sterile gloves (1 pair), masks (2) and Biopatch® if included.



*Chloraprep® Applicator -
Picture used with permission
from CareFusion Inc., 2010*

Infants under 60 days old use Betadine® and normal saline swabs to clean the skin instead of the Chloraprep® and clean the skin in a different way- making circles starting at the exit site and working in bigger circles. Your home health nurse will show you how to do this.

Getting Ready:

1. Wash your hands with soap and water or you may use an alcohol-based hand sanitizer. Scrub your hands for at least 15 seconds to make sure they are free of germs. Be sure you have all of your supplies available and near you. Place them on a clean surface like a table or counter (wipe down with soap and water or alcohol before you begin).
2. Open the central line dressing kit carefully, without touching the inside of the wrapper. Remove the first mask from the kit and apply it to the patient. (If the patient is unable to follow directions or is an infant please have a second caregiver wear a mask and assist you to help keep patient still or help turn their head away from the central line). Remove the second mask from the kit and put it on, securely covering your nose and mouth.
3. Put on non sterile exam gloves. (These are not included inside the central line kit).

Remove the Dressing:

1. Carefully remove the old dressing from the central line by gently lifting up the edges of the dressing then peeling the dressing off slowly, being careful not to pull on the central line when you pull the dressing off. Place one finger on the center of the dressing, use the other hand to loosen an edge of the dressing and then pull towards you stretching the tape and loosening it from the skin. Do not touch the part of the central line under the dressing until you have sterile gloves on. If there is a Biopatch®, it will usually stick to the dressing and easily come off the skin when the dressing is peeled back.
2. **Carefully look at the insertion site for signs of infection** such as redness, drainage, pus, pain or swelling around the site or up the chest or arm. Look at the site for signs of the central line being dislocated or pulled out (for example: the central line is sticking out from the skin more than the last time) or fluid is leaking out around the site. If the central line has sutures, be sure they are still there. Look at the skin under the dressing for dry skin, rash or irritation. **Call your doctor if you see any of these signs of infection or problems with the central line.** Keep exposed central line site away from objects such as clothes or unclean hands until the site can be covered with a new dressing. Be sure not to sneeze or cough toward the open site.

3. **If you have a STAT LOC® device and the central line is not sutured in place, you will need a home health nurse to teach you how to change the STAT LOC® dressing.**

4. Remove gloves and throw the used dressing and supplies in the trash. Wash your hands as above.

Clean the Site:

1. Remove packet of sterile gloves from the central line dressing kit and place on a table or flat area. Open carefully without touching the inside of the sterile glove wrapper. Use the edges to open and lay flat. Apply sterile gloves one at a time (insert hands palms up- usually put gloves on your dominant hand first) by touching only the inside folded up cuffs of the gloves. Your nurse will show you how to apply sterile gloves.

2. Pick up the Chloraprep® applicator from inside the central line kit. Squeeze the wings until you feel and hear the inside of the wand snap or “pop” to release the medicine. Hold the sponge pad down so the fluid drains into the sponge.

3. Scrub the exit site and surrounding area that will be covered by the dressing for at least 30 seconds with the Chloraprep® applicator. Use friction and scrub “back and forth” and “up and down” when cleaning the site to make sure the cleaner gets into as much of the skin as possible. Also clean the part of the central line that will be under the dressing starting at the exit site and going towards the cap.

4. Allow the skin to air dry until the site is completely dry and the area is not shiny or wet. Do not fan air over the site or blow air onto the site as you could be blowing germs towards the central line.

Apply the Dressing:

1. If your kit has a Biopatch® anti-microbial disk, place this directly on top of the exit site of the central line with **BLUE SIDE UP**. Be sure the white underside of the Biopatch® is touching the skin completely. Be sure the edges of the Biopatch® slit meet. To make it easier to remove, be sure the central line rests directly on top of the slit.

2. Peel the backing off the biggest piece of the cover dressing to show the sticky underside. Apply the dressing sticky side down over the exit site of the central line (and the STAT LOC® or Biopatch® if the patient has either). Press down gently on the edges to create a seal. Be sure the entire dressing is secure and smooth then remove the outer stickers. Record the date and time on the dressing so you remember when it was last done.

3. Stabilize the central line by taping the lumens to the skin so they don't hang down and pull. Your nurse can show you how to do this by using small strips of tape to wrap around the central line in a V shape.

4. Remove your gloves and throw used supplies in the trash. Wash your hands as above.

HOW TO CHANGE THE CAPS:

Supplies you will need:

- Hand sanitizer (or soap and water to wash hands)
- Non sterile exam gloves
- Alcohol pads (tip: tear package in half so the pads are easy to reach)
- New cap (tip: carefully peel the paper top off of the package and remove the end piece or cover to show the part where the cap will screw into the central line then place the cap back into the package so it is easy to reach when you need it. Do not touch the threads that will screw into the central line.)

Steps:

1. Wash your hands with soap and water or you may use an alcohol-based hand sanitizer. Scrub your hands for at least 15 seconds to make sure they are free of germs. Be sure you have all of your supplies available and near you. Place them on a clean surface like a table or counter (*wipe down with soap and water or alcohol before you begin*). Put on non-sterile exam gloves.

2. **Clamp the central line.** Remove the old cap by unscrewing the cap (turn left to loosen it). Scrub the hub of the lumen and the threads well with an alcohol pad, using friction. Be careful not to let the hub touch anything other than the alcohol pad.

3. Apply a new sterile cap being sure not to touch the cap to anything except the hub of the central line. The cap screws in easily- you turn the cap to the right to tighten and secure it. Be careful not to make it too tight or the cap may break or crack.

4. Remove gloves and throw away all used supplies. Wash your hands as above.

FLUSHING THE CENTRAL LINE:

Please see the chart on the last page for your specific home doses.

1. General care of the central line includes flushing each lumen with 5-10 ml of a 0.9% Sodium Chloride solution (normal saline) followed by gently filling the central line and cap with the correct amount of heparin each day. Normal saline is used to clean the central line of any buildup caused by medicines or blood. Not clearing the central line of this may cause clotting. Heparin is used to keep the central line from clotting. The central line should always have heparin in it when not in use. **Your home health nurse or doctor will tell you how much saline and heparin to use.**
2. **If you or your child has a heparin allergy, HITT, other clotting problems, or have been instructed not to use heparin, follow your doctor's specific instructions.**
3. It is important to check the expiration date on all IV medicines or flushes and read the label on the heparin because you may use two different doses.
4. **Never reuse syringes or use any supplies that have been dropped on the floor.** Always use a 10 ml or larger syringe to flush the central line, a smaller syringe may push too much pressure into the central line and may damage it.
5. **When to flush the central line:**
 - **When not giving IV medicines daily:** Flush each lumen of the central line once a day with normal saline followed by the correct amount of heparin.
 - **Before and after all IV medications:** Flush the lumen to be used with normal saline before giving IV medication and after giving IV medication, then follow with the correct amount of heparin. Do this each time you give an IV medicine. This is known as S-A-S-H method, standing for Saline, Antibiotic, Saline, Heparin. Your home health nurse will show you how to do this.
 - **In between bags:** If you are getting a continuous IV medication, flush the line with normal saline when the bag and tubing are changed. Your home health nurse will show you how to do this.

Supplies you will need:

- Hand sanitizer (or soap and water to wash hands)
- Alcohol pads
- Normal saline and heparin flushes. **Be sure to check the label for the correct dose.**

Steps:

1. Wash your hands with soap and water or you may use an alcohol-based hand sanitizer. Scrub your hands for at least 15 seconds to make sure they are free of germs. Be sure you have all of your supplies available and near you. Place them on a clean surface like a table or counter (*wipe down with soap and water or alcohol before you begin*).
2. Prepare each flush to be used by holding the syringe straight up with the cap on top, removing the cap and pushing up on the plunger gently to push the small air bubble out. Replace the cap, being careful not to touch the inside threads of the cap to anything.
3. Scrub the cap of the central line well with an alcohol pad, using friction. Be careful not to touch the cap to anything after you have cleaned it. **Be sure to clamp the central line and clean the cap with alcohol between each flush if the cap touches anything.** Remove syringe cap from the flush and screw the threads of the syringe on to the cap of your central line. Unclamp the central line.
4. **NORMAL SALINE FLUSH:** Flush the central line with normal saline by using the "Push-Pause" method. Place your thumb on the plunger and push a little normal saline into the central line, pause for 1-2 seconds, then repeat until the normal saline flush has been given. This is a very good way to clean the inside of the central line. **Clamp the central line** before you unscrew the syringe.
5. **HEPARIN FLUSH:** Gently push heparin into the central line. The goal is to fill the central line and cap with heparin so it stays in the central line until the next time you need to use it. This is called a heparin block. **Clamp the central line** before you unscrew the heparin flush.
6. **Repeat these instructions for each lumen using new supplies each time.**
7. Throw supplies in the trash when you are done. Wash your hands as above.

TROUBLESHOOTING CHART

| PROBLEMS AND CAUSES | SIGNS/SYMPTOMS YOU MAY SEE | WHAT TO DO |
|---|---|--|
| Air in central line The central line is unclamped at the same time the cap is off or loose. | You (or your child) may have shortness of breath. | This is an Emergency! Clamp the central line, do not flush the central line, and call 911 and your doctor right away to tell them you or your child are having problems breathing. Lie on the left side, prop feet up and put head down until the shortness of breath or chest pain is gone. |
| Bloodstream infection Bacteria or germs have gotten into the blood through the central line. | You (or your child) may have a fever, chills, increased tiredness or irritability. | Take you (or your child's) temperature and if it is over 100.5°F or 38°C, call your doctor. |
| Blood backing up in the central line The central line is unclamped at the same time that the cap is off or loose. | You notice blood in the central line or dripping from the cap. | Clamp the central line. Clean the end with alcohol. Place a new cap and flush the central line with saline and heparin. Call your home health nurse or doctor if you are unable to flush. |
| Broken or cut central line For example: child bites on the tubing or the central line has a cut, tear, or break. | You notice blood leaking from the central line or witness the damage. | <ul style="list-style-type: none"> Clamp the central line between the damaged part and the exit site and wrap the central line with sterile gauze. If the central line breaks completely, put the pieces in a plastic bag and bring to the doctor. If there is bleeding, apply and hold pressure to the site to stop the bleeding. They may want to take an x-ray to make sure all of the central line came out. Call your doctor right away. |
| Central line is pulled out. | You notice the central line is not in the skin anymore. | Apply pressure to the site with sterile gauze for at least five minutes or as long as it is bleeding. Tape the gauze in place. Put the central line in a plastic bag and bring it to the doctor. They may want to take an x-ray to make sure all of the central line came out. Call your doctor right away. |
| Clogged central line The central line may still be clamped or may be kinked. If not there may be a blood clot that is in the tubing slowing or stopping the infusion. | There is resistance when you flush the central line, fluid leaks around the central line exit site, or blood does not come into the central line when you pull back on the syringe plunger. | <ul style="list-style-type: none"> If the central line is clamped, unclamp it. You may need to change the dressing to look at the central line to see if it is kinked or twisted. If you are able, then flush the central line with normal saline then heparin if not giving any more IV medicines. If the central line is unclamped but there is still resistance when you flush, stop flushing and clamp the central line. DO NOT FORCE THE INFUSION, IV MEDICATION OR FLUSH. Call your home health nurse or doctor right away. |
| Cuff is visible Tunneled central line may be pulled out of place. | You notice the cuff is visible during dressing change or any other time. | Finish dressing change. Do not flush. Call your doctor right away. |
| Infection At the site where the central line enters the body or the vein or up the arm or chest. | You notice redness, drainage, swelling, tenderness, pain, odor and/or you have a fever over 100.5°F or 38°C. | Call your doctor right away. Review signs of infection with your child. Since the central line is a foreign object in the body, there is always a risk of infection so learning how to care for it safely is important. |

YOUR CENTRAL LINE INFORMATION:

Type of central line: PICC Non tunneled Tunneled Other _____
 Single lumen Double lumen Triple lumen

Power PICC/Central line: Yes No

Identification Card given to patient/family to keep with them at all times

Date Central line placed _____ Placed in Angio Placed in OR

Name of doctor who placed the central line _____

Catheter length and size _____

Special Instructions:

Change Dressing every _____ days (or if loose, dirty or wet)

Change Caps every _____ days (or after blood draws/see blood in cap)

Flush Instructions:

Flush each lumen once a day: 0.9% Sodium Chloride (normal saline) Flush ___ml then heparin 200 units/2 ml block

For Intermittent IV antibiotics or IV medications: Follow S-A-S-H method as instructed

0.9% Sodium Chloride (normal saline) Flush ___ml then heparin 200 units/2 ml block

0.9% Sodium Chloride (normal saline) Flush ___ml then heparin 30 units/3 ml block

(Note: Usually tunneled lines use 5 ml saline flush and PICC lines use 10 ml saline flush for adults and 5 ml saline flush for young children)

Home Health Supply Company:

Contact information _____

Supplies being delivered to hospital room before discharge

Supplies being delivered to home on _____

Home Health Skilled Nursing Visit Company:

Contact information _____

Date and time of first home skilled nursing visit _____

Physician Name and Phone number: _____

Other: _____

ADDITIONAL NOTES: