

Central Line Care



**HOMeward
BOUND**



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Call the clinic as advised on page 5 or when you have concerns about your child's central line.

Your clinic _____

Phone Number _____

Lesson 1

Understanding Your Child's Central Line

Goals for this lesson

In the classroom, you will:

- state why your child needs a central line
- list and explain the parts of the central line
- describe what a central line-associated bloodstream infection is and what can cause it.

At your child's bedside, you will:

- point to and name the parts of the central line.

What is a central line?

A central line is small, soft tube called a catheter. It is put in a vein that leads to your heart because your child's health care team needs to have an entry point to his or her blood as part of the treatment plan.

A central line may be placed because:

- the medicine your child needs would bother the small veins in his or her hands or arms
- your child needs antibiotics or other IV drugs for a long time
- your child needs nutrition through a central line
- the veins in your child's hands or arms cannot take an IV very easily
- we need to take many blood samples for lab tests over a long time period.

The central line is put in a vein that leads to your child's heart, which lets medicine and nutrition given through the central line to mix with your child's blood.

Types of central lines

Peripherally inserted central catheter (PICC)

A PICC is a long, soft, thin, narrow tube, inserted like an intravenous (IV) line, near the bend of the arm or sometimes in the leg of babies. The tip of a PICC ends in the chest, either above or below the heart.

Central venous catheter

Broviac or Hickman central venous catheters, are soft, thin tubes inserted surgically through a small opening in the chest. Central venous catheters are used when a child's treatments will be needed over a long period of time.

What are the parts of the central line?

Site

The area where the central line comes out of the skin is called the site (sometimes called 'exit site').

Dressing

The site may be covered by a protective antibiotic disc (a disc soaked with a liquid that fights germs) and a clear dressing to keep germs from getting in. The clear dressing lets you check the skin around the site for signs of infection including redness, swelling, or drainage.

The protective antibiotic disc, if your child's line has one, and the clear dressing should be changed every 7 days, or sooner, if wet, loose, peeling, or dirty.

If a gauze dressing is used, it must be changed daily so the site and surrounding skin can be checked for signs of infection.

Lumens

The lumens are the tubes that come out of the site.

Injectable end caps

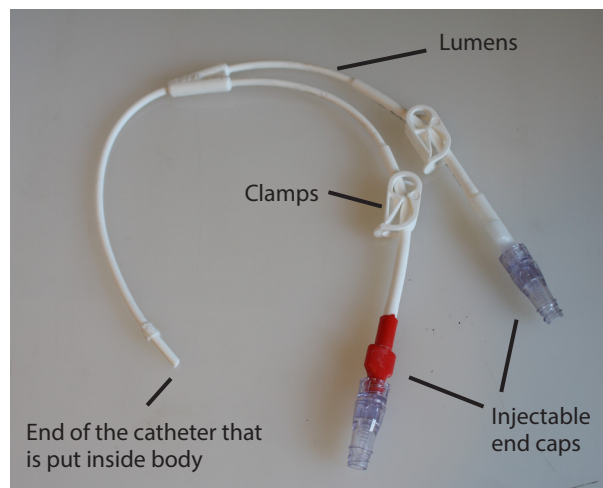
Attached to the end of the lumens are injectable end caps. You will attach syringes to the injectable end caps to use the central line. The end caps are also a barrier to help protect the central line from germs.

What is a central line-associated bloodstream infection?

A central line-associated bloodstream infection (CLABSI) happens when germs get into the catheter site or bloodstream.

Anyone with a central line can get an infection, but you may be at a higher risk for a central line infection if you:

- are in the intensive care unit (ICU)
- have a weakened immune system or serious illness
- are receiving a stem cell transplant or chemotherapy
- have the line for a long time
- have a central line in your neck or groin.



Lesson 2

Keeping the Central Line Clean

Goals for this lesson

In the classroom, you will:

- explain why it is important to keep your child's central line clean
- list the steps to keep your child's central line clean.

At your child's bedside, you will:

- show that you know how to wash your hands and prepare surfaces before touching your child's central line.

Caring for a child with a central line may be a little scary at first. Your child's nurses will teach you and help you get comfortable with how to care for your child's central line at home.

It is very important to prevent infection in your child's central line. If the central line gets infected, we may need to take it out. The nurse will show you how to keep your supplies germ-free (sterile) so no bacteria get in the central line and cause infection.

Before touching your child's central line, always follow these 5 easy steps:

1. Gather the supplies you need.
2. Clean the solid surface of your work area with household cleaner (like Lysol or another brand) and lay a clean towel on it.
3. Clean your hands well by either:
 - using an alcohol hand sanitizer according to the directions. Let the sanitizer air dry to kill the bacteria.
 - scrubbing your hands for at least 30 seconds with antibacterial soap, rubbing all surfaces briskly, including under the fingernails. Rinse well with warm water. Use a paper towel or clean hand towel to dry your hands thoroughly, and then use the towel to turn off the faucet.
4. Use a paper towel or clean hand towel to touch any other surfaces before touching the central line.
5. Always put on gloves before touching any parts of the central line.

Lesson 3

Daily Care

Goals for this lesson

In the classroom, you will:

- list the central line tasks that need to be done every day.
- describe what to look for when you check the site
- describe the steps to scrub the injectable end cap and flush the line
- list the signs and symptoms that mean you need to call the clinic

At your child's bedside, you will:

- check the site
- scrub the injectable end cap and flush the line.

1. Check the site

- Look at the site to check for redness, soreness, swelling, or drainage. **If the site looks infected or your child has a temperature of 100.4° F (38° C) or higher, call the clinic right away.**
- Check the dressing to see if it is wet, loose, peeling, or dirty. If it is, change the dressing.

2. Scrub the injectable end cap and flush the line

Gather your supplies:

- gloves
- chlorhexidine or alcohol pad
- saline syringe
- heparinized saline syringe.

Follow these steps:

1. Prepare your work area and clean your hands following the rules on page 3.
2. Put on gloves.
3. Scrub the injectable end cap of the first lumen with a chlorhexidine or alcohol pad for 30 seconds at least 5 times around and 5 times across the top.
4. Let the end cap air dry completely.
5. Attach the saline syringe to the injectable end cap of the first lumen.
6. Unclamp the lumen.
7. Pull back on the syringe until blood is seen and push 5 ml into the line.
8. Attach the heparinized saline syringe to the injectable end cap.
 - If your child weighs less than 11 pounds: push 1.5 ml into the line
 - If your child weighs 11 pounds or more: push 2.5 ml into the line.
9. Clamp the first lumen. Clamp only on the thick part of the line to prevent damage.

Repeat Steps 3 through 9 if your child's central line has more lumens.

Take your child to the clinic or emergency room right away if:

- your child has signs of a bloodstream infection, which are:
 - your child has a temperature of 100.4° F (38° C) or higher
 - chills or shaking
 - sweating
 - feeling sick
 - too tired to do anything (fatigue)
 - sleepy
 - dizzy.
- your child's central line has signs of a tear or hole, such as:
 - line bulges when flushing
 - fluid leaks when flushing or giving medicine
 - you can see a hole.

If it is during clinic hours take your child to the clinic.

If it is after hours, take your child to the nearest Emergency Room.

Call the clinic right away if:

- the skin near the central line shows signs of infection, such as redness, drainage, swelling, warmth or pain where the line meets the skin
- you are having a hard time flushing the line or cannot flush the line
- medicine or IV fluids will not go through central line
- you cannot get blood return with flushing
- your child's central line is partially or completely out
- your child shows signs that there is air in the bloodstream, such as:
 - trouble breathing
 - chest pain
 - coughing
- your child's skin is red, has a rash, or itches beneath the dressing.

Lesson 4

Weekly Care

Goals for this lesson

In the classroom, you will:

- list the central line tasks that need to be done every week.
- describe how to change the dressing
- describe the steps to change the injectable end cap
- list the signs and symptoms that mean you need to call the clinic

At your child's bedside, you will:

- change the dressing
- change the injectable end cap.

1. Change the dressing

Gather supplies and a helper, if you need one:

- non-sterile gloves (to remove old dressing)
- sterile gloves (2 sets if you have a helper)
- surgical masks (3 if you have a helper; one for you, one for your helper, and one for your child)
- alcohol swab sticks or alcohol pads
- chlorhexidine applicator (1 or 2)
- new clear dressing
- protective antibiotic disc
- skin protectant swab sticks or pads
- sterile tape
- permanent marker.

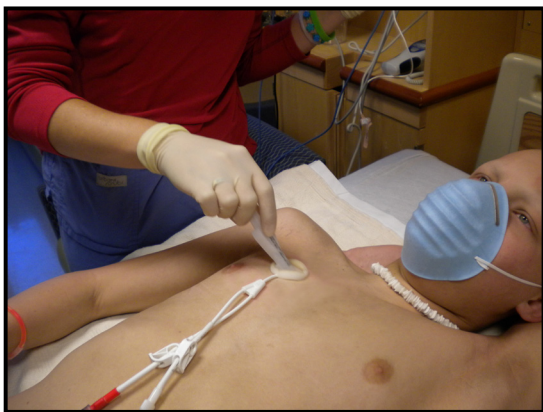
You may have a dressing kit with the above supplies in it. Check with your child's doctor or nurse if you think your child has an allergy to any cleaning solution or dressing before using anything different. If your child is allergic to any supplies, the doctor may give you a different cleaning solution or dressing.



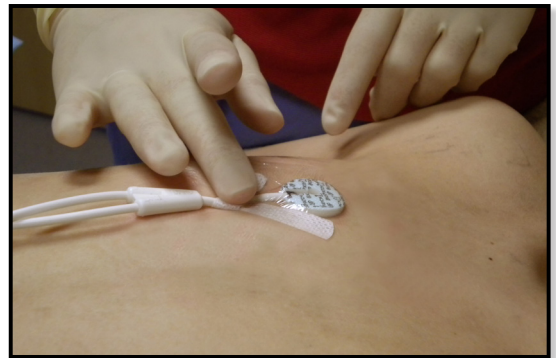
Central line dressing supplies.

Follow these steps to change the dressing:

1. Prepare your work area, clean your hands following the rules on page 3, and position your child comfortably.
2. Put on a surgical mask so you are not breathing any bacteria onto the site. Everyone in the room, including your child, should wear a mask.
 - Tell your child to turn his or her head away from the site if he or she cannot wear a mask.
3. Put on non-sterile gloves.
4. Open the central line dressing kit onto your clean work area.
5. Remove the old dressing and protective antibiotic disc.
6. Remove non-sterile gloves and throw them away.
7. Clean your hands again.
8. Put on sterile gloves.
9. Look at the site to check for redness, swelling, warmth, odor, or drainage.
10. Take chlorhexidine applicator and squeeze the wings together to allow the cleaner to saturate the sponge on the end of the stick.



11. Use the chlorhexidine applicator to scrub the site using a back-and-forth motion for 30 seconds. Use 1 or 2 applicators, as needed.
12. Let the site air dry completely. Never blow on or fan the site—this can put germs on the site and risk infection.
13. Place protective antibiotic disc with blue side up around the central line where it enters the skin.
14. Apply skin protectant and let air dry completely. Do not blow on or fan the site.
15. Apply clear dressing over the site and central line. Gently press over the dressing and around the edges to be sure it is secure.
16. Secure the line with sterile tape using a chevron fold on the exposed line to keep the line from getting pulled.



17. Label the dressing with the date and mark the date on your calendar so you will know when the next dressing change should be done. Dressing changes are every 7 days or sooner if wet, loose, peeling or dirty.
18. Use clean stretch netting to keep the lumens up and secure to the chest, out of diapers, underwear, and from hanging loosely.

2. Change the injectable end caps

Change the injectable end caps each time you change the dressing (every 7 days) or sooner if they become wet, loose, or dirty.

Keep the new injectable end cap in the package until placing it on the lumen. Do not let new end caps or ends of lumens to touch any surfaces when changing the end cap to keep them clean and keep germs from getting in the line.

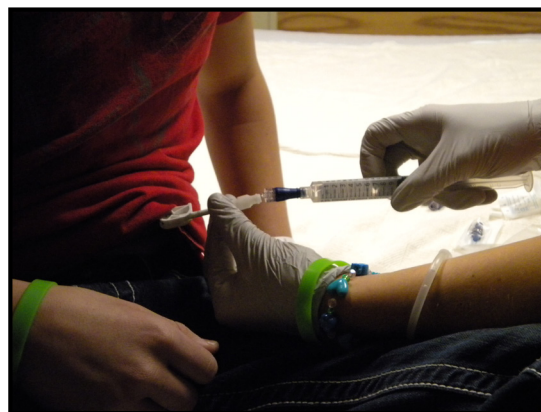
Gather supplies and a helper, if you need one:

- gloves (2 sets if you have a helper)
- surgical masks (3 if you have a helper; one for you, one for your helper, and one for your child)
- chlorhexidine or alcohol pad for each lumen
- saline syringe for each lumen
- heparinized saline syringe for each lumen
- new injectable end cap for each lumen.

Follow these steps to change the injectable end caps:

1. Prepare your work area, clean your hands following the rules on page 3, and position your child comfortably.
2. Put on gloves and masks.
3. Open the injectable end cap package on your clean work surface but do not take the cap out of the package.
4. Attach the saline syringe to new end cap while it is still in the package and push in $\frac{1}{2}$ ml of saline to remove air.

5. Make sure the lumen is clamped and unscrew the existing injectable end cap and remove it.
6. Screw on the new injectable end cap with the saline syringe still attached. Do not touch the end of the cap that screws into the lumen. If you do touch the end by accident, throw the injectable end cap away and use a new one.
7. Unclamp the lumen and pull back on saline syringe until blood is seen, and push 5 ml into the line.



8. Attach the heparinized saline syringe to the injectable end cap.
 - If your child weighs less than 11 pounds: push 1.5 ml into the line
 - If your child weighs 11 pounds or more: push 2.5 ml into the line.
9. Clamp the lumen. Clamp only on the thick part of the line to prevent damage.

Repeat Steps 3 through 9 if your child's central line has a more lumens.

Lesson 5

Giving Medicine

Goals for this lesson

In the classroom, you will:

- describe the steps to give medicine through your child's central line

At your child's bedside, you will:

- give medicine to your child through the central line.

Gather your supplies:

- gloves
- chlorhexidine or alcohol pads
- 2 saline syringes
- 1 heparinized saline syringe
- medicine.

Follow these steps:

1. Prepare your work area, clean your hands following the rules on page 3, and position your child comfortably.
2. Put on gloves.
3. Scrub the injectable end cap of the selected lumen with a chlorhexidine or alcohol pad for 30 seconds at least 5 times around and 5 times across the top.
4. Let the end cap air dry.
5. Attach the saline syringe to the injectable end cap of the lumen.

6. Unclamp the lumen.
7. Pull back on the syringe until blood is seen and push 5 ml into the line.
8. Attach the medicine tubing to the injectable end cap and begin the infusion.
9. Once the medicine has infused completely, remove the medicine tubing from the injectable end cap.
10. Scrub the injectable end cap with a chlorhexidine or alcohol pad for 30 seconds at least 5 times around and 5 times across the top and let air dry completely.
11. Attach the second saline syringe to the end cap and push 5 ml into the line.
12. Attach the heparinized saline syringe to the injectable end cap.
 - If your child weighs less than 11 pounds: push 1.5 ml into the line
 - If your child weighs 11 pounds or more: push 2.5 ml into the line.
13. Clamp the selected lumen. Clamp only on the thick part of the line to prevent damage.

Repeat Steps 1 through 13 for as many times as your child's doctor prescribed the medicine.

Lesson 6

Living with a Central Line

Goals for this lesson

In the classroom, you will:

- describe the steps to bathe your child
- list safety tips
- list items to always have with you.

At your child's bedside, you will:

- help your child get ready for a bath or shower
- show appropriate safety measures in caring for child.

Giving your child a bath

Your child should not shower or bathe for 48 hours after the new central line has been placed. Wipes or washcloths can be used, but the central line site must be kept completely dry.

The bandage at the insertion site can be removed 48 hours after the central line has been placed. Do not remove the sticky tapes (steri-strips). They will fall off on their own.

After 48 hours, your child may bathe or shower with a water-safe cover over the site. Taking a shower is better than taking a bath for keeping germs out of the site.

You must make sure the site stays dry during a shower or bath to keep germs in the water from causing an infection in the central line.

Gather your supplies:

- water-safe cover
- waterproof tape.

Follow these steps:

1. Cover the central line site and tuck lumens underneath the water-safe cover to keep them from getting wet.
2. Press along the edges of the water-safe cover to make sure there are no air pockets. Place tape around the edges of the water-safe cover to be sure the cover stays on well.
3. While showering, your child should face away from the spray. If bathing, make sure the water-safe cover, central line site, and lumens stay above the water level. Do not let lumens drop into bath water, as germs from the water may enter the end of the central line.
4. After showering or bathing, carefully remove tape and water-safe cover.

If your child's central line dressing is loose or wet after the shower, you will need to change the dressing.

If the injectable end caps are wet, you will need to change them.

Your child should not swim or go to a water park when he or she has a central line, as germs from the water could enter the central line and cause an infection.

Safety tips

In addition to the safety instructions included in Lessons 1 to 4, follow these safety tips to keep your child's central line from having problems:

- Use stretch netting, a tube-securing device, or tape to keep the central line:
 - out of diapers or underwear
 - from hanging loosely.
 - secure to your child's body
 - from getting pulled and tugged.
 - Flushing each lumen daily, as instructed, with saline and heparinized saline and clamping afterward can help keep clots from forming in the line.
 - Do not let your child use swings or revolving doors, unless line is taped securely to chest first.
 - Do not let toddlers or preschool aged children use scissors without being watched carefully; keep scissors and sharp objects away from the line.
 - Do not force if the line is difficult to flush.
- Only clamp the line on the thick part or you may damage the line.
 - Keep the line out of your child's mouth.
 - Getting air in the bloodstream is rare. It may happen if the injectable end cap comes off while the line is unclamped or if there is a hole in the line. It usually takes a large amount of air in the bloodstream to cause a problem.
 - Keep air from getting in the bloodstream by always keeping an end cap on the end of the lumen and avoiding damage to the line.
 - Always let chlorhexidine and skin prep air dry completely before applying the antibiotic disc and dressing.

Emergency kit items

Pack an emergency kit of these items to have with you to care for your child's central line:

- chlorhexidine swabs
- saline flushes
- heparin flushes
- extra clamp
- extra injectable end cap
- extra dressing change kit
- masks
- gloves
- sterile gauze pads
- adhesive tape.

Central Line Problems and Solutions

Problem	Signs and symptoms	What to do	How to keep this from happening
Bloodstream infection	<ul style="list-style-type: none"> • Temperature is 100.4° F (38° C) or higher • Chills or shaking • Sweating • Feeling sick • Too tired to do anything (fatigue) • Sleepy • Dizzy 	<ul style="list-style-type: none"> • If it is during clinic hours, 7:30 a.m. to 3:30 p.m., Monday through Friday, take your child to the clinic. • If it is after hours, take your child to the Emergency Room. 	<ul style="list-style-type: none"> • Wash your hands and put on gloves before touching the central line. • Change the dressing once a week or more if it is wet, loose, peeling, or dirty. • Change the injectable end caps with each dressing change. • Scrub the injectable end caps with alcohol or chlorhexidine for 30 seconds, at least 5 times around and 5 times across top and let dry before flushing. • Do not let your child swim or play in water. Cover with a water-safe covering before bathing or showering. • Use stretch net to keep the line up and secure, out of diapers, out of underwear, and from hanging loosely.
Skin or exit site infection	Redness, drainage, swelling, warmth, or pain where the line meets the skin	Call the clinic. If it is after hours, you will speak to the on-call health care provider.	
Blocked or clogged central line	<ul style="list-style-type: none"> • Having a hard time flushing line or cannot flush line • Medicine or IV fluids will not go through central line • No blood return with flushing 	<ul style="list-style-type: none"> • Make sure clamp is open and line is not kinked near skin. • Be careful not to flush too hard, as this may damage the line. • Check other lumen and flush. • Try moving your child to a different position by raising his or her arm, standing up, or lying on side. • Flush with heparinized saline. • Call the clinic right away, as a medicine may be needed to dissolve a blood clot, if there is one. If it is after hours, you will speak to the on-call health care provider. 	Flushing each lumen daily, as instructed, with saline and heparinized saline and clamping afterward can help keep clots from forming in the line.

Problem	Signs and symptoms	What to do	How to keep this from happening
Central line gets pulled or comes out	<ul style="list-style-type: none"> Bleeding at insertion site Line is partially out Line is completely out 	<ul style="list-style-type: none"> Remove dressing. Do not use line if it is partially out. If site is bleeding, put firm pressure on the site until the bleeding stops. Cover area with gauze and tape. Call the clinic right away. If it is after hours, you will speak to the on-call health care provider. For bad bleeding that will not stop with pressure, or if having problems breathing, call 911. 	<ul style="list-style-type: none"> To keep the central line from getting pulled and tugged, use a tube-securing device or tape to hold it in place. Use stretch netting to make sure lines do not hang loosely. Do not let your child use swings or revolving doors, unless line is taped securely.
Hole or tear in the central line	<ul style="list-style-type: none"> Bulging of line when flushing Leaking of fluid when flushing or giving medicine You can see a hole in the central line 	<ul style="list-style-type: none"> Clamp the line between the hole and your child's body and cover with tape. If necessary, fold the line or pinch it. If it is during clinic hours, 7:30 a.m. to 3:30 p.m., Monday through Friday, take your child to the clinic. If it is after hours, take your child to the Emergency Room. Do not put glue on the line or try to fix it yourself. 	<ul style="list-style-type: none"> Keep scissors and sharp objects away from the line. Do not let toddlers or preschool aged children use scissors without being watched carefully. Do not force if the line is difficult to flush. Keep line secure to your child's body using tape or stretch netting at all times. If your child's line has a clamp, clamp the line only on the thick part. Keep the line out of your child's mouth.
Air in the bloodstream	<ul style="list-style-type: none"> Trouble breathing Chest pain Coughing 	<ul style="list-style-type: none"> Clamp the line as close as possible to your child. Lay your child on his or her left side. Call the clinic right away. If it is after hours, you will speak to the on-call health care provider. Call 911 if there are breathing problems or chest pain. 	<ul style="list-style-type: none"> Getting air in the bloodstream is rare. It may happen if the end cap comes off while the line is unclamped or if there is a hole in the line. It usually takes a large amount of air in the bloodstream to cause a problem. Keep air from getting in the bloodstream by always keeping an end cap on the lumen and by protecting the line from damage.
Skin irritation from dressing	Redness, rash or itching beneath dressing	Ask nurse or home health nurse for suggestions for different types of dressings that may be used.	Always let chlorhexidine and skin prep air dry completely before applying the antibiotic disc and dressing.

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