

Caring for a Child with a Central Venous Catheter (CVC)

Education Checklist

- ☐ Watch Get Well Network Videos on CVC care
- ☐ Review this handout on CVC care
- ☐ Each caregiver is able to perform CVC care
 - Flushing, S-A-S-H, dressing & cap change
- ☐ Vendor and pump training
- ☐ Attend CVC class in the Family Resource Center
- ☐ Complete 24-48 hours (decided by care provider) of care of your child

What is a Central Venous Catheter (CVC)?

A CVC is a soft plastic tube (catheter) that is used to give medications, fluids, blood, and nutrition (IV food) into a vein. It can also be used to draw blood so your child will not need needle sticks. It is a longer, more flexible tube than a regular IV. A CVC can last a long time if your child needs it while in the hospital or at home.

Types of CVC

There are different kinds of CVC catheters (lines). The doctor will decide which one is best for you/your child.

Single/double lumen CVC (Broviac): Allows one or more medication or fluids to be given at a time.

Double lumen CVC (Hickman): Allows more than one medication or fluid to be given at the same time.

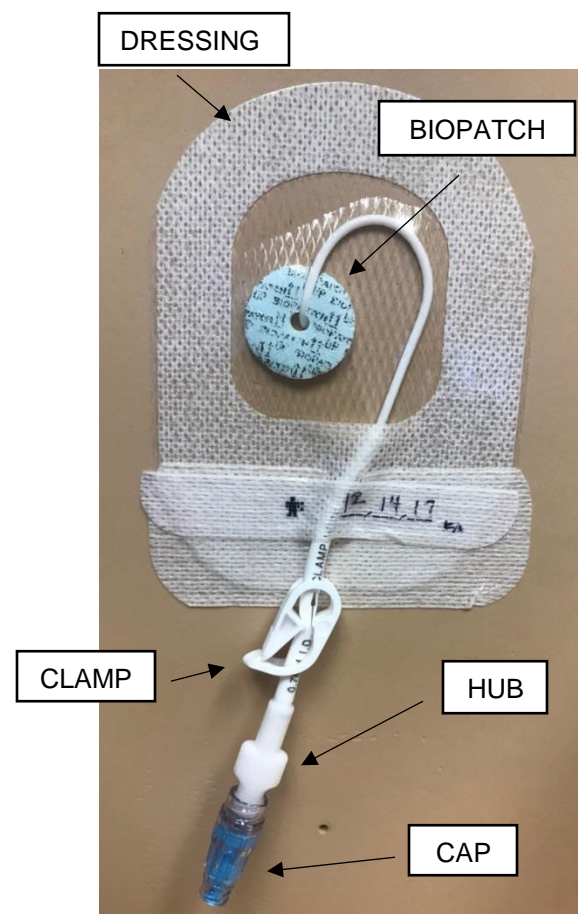
Apheresis Medcomp: The catheter is short, thick, and a less flexible tube than the Broviac or Hickman catheter.

Pheresis Power Line: Placed in the chest in children less than 10kg.

What are the different parts of the CVC?

Dressing: Must be clean, dry, and intact at all times. It's important that the dressing is on well to decrease the chance of infection but not allowing germs to get under the dressing and to keep the line from coming out.

Biopatch®: Used to clean the skin and help prevent infection at the insertion site.



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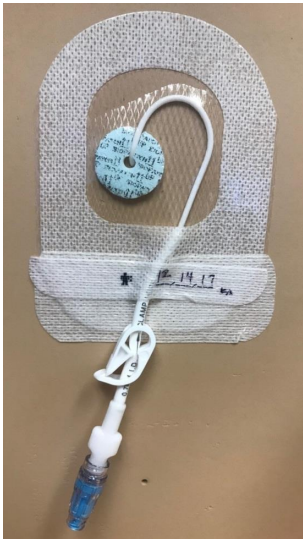
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Clamp: A clamp is located on each lumen (tube) of the CVC. When the clamp is open, the clamp can slide up and down the tube.

- The clamp must be closed on the thick padded part of the tube to prevent cuts and damage to the catheter which may cause leaking.
- The clamp must be open when flushing, putting fluids in, or when drawing a blood sample through the CVC.
- The clamp should be closed at all other times when the catheter is not used.

Hub: The part that the cap connects to. This part gets cleaned for 20 seconds, dried for 10 seconds during a cap change every 7 days or if the cap comes off.

Cap: The part on the end of the line that you connect syringes to. It's where you flush the line and gets cleaned for 20 seconds and dried for 10 seconds every time you use it.



BROVIAC



HICKMAN



PHERESIS
MEDCOMP



PHERESIS
POWER LINE

How is the CVC placed?

You/your child will be given anesthesia (medication to make them sleep) for this short procedure. A doctor will choose the best place for your child's CVC, usually in the chest.

- The CVC is placed in a large vein (vessel) near the heart.
- An x-ray is done to make sure the CVC is in the right place.
- There is a cuff placed around the line and under the skin. As the incision heals, new skin will grow around the cuff.
- The cuff helps to keep germs out of the body and helps keep the line in.
- If you see the cuff, let the doctor/nurse know. You should **not** see the cuff on the outside of the body.

What is expected after the CVC is placed?

Pain: The area where the CVC was placed may be sore for a couple of days. If you or your child is having pain, check with your doctor to find out if a mild pain medicine such as acetaminophen (Tylenol) can be given. If your child has cancer, check his/her temperature before giving Tylenol to make sure there is no fever.

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What can we do to prevent infection?

There is a small opening in the skin where the CVC goes into the vein. This makes the risk for infection higher. Here are some things you can do to decrease the chances of infection:

- Everyone must wash their hands thoroughly for 30 seconds before touching the line and use hand sanitizer in between tasks.
- Please remove artificial nails while your child has a CVC. Artificial nails can spread germs. It's best to remove nail polish while the child is receiving treatment.
- Choose an ideal area in your home for CVC care:
 - Avoid the bathroom and kitchen-these areas have more germs.
 - Turn off ceiling fans and close windows.
 - Keep pets and other children away during care.
 - Use a new, non-porous surface (example: plastic cutting board) for CVC care. Clean with anti-bacterial wipes, soap and water, alcohol wipes, or vinegar before and after each use. Allow it to air dry.
- Dressing changes are done once a week to prevent infections at the site. You will be taught how to change the CVC dressing and cap and they must be changed every 7 days or if dirty or wet.
- After the CVC has been in place for 48 hours, you can take a shower.
- Make sure to give your child a shower every day
- Brush your child's teeth two times a day. Caregivers should also brush their teeth two times a day too!
- Do not dunk the CVC under water. If the dressing gets wet, it needs to be changed.
- If it is not the day of your weekly dressing change, make sure to cover the dressing with clingy plastic wrap or Saran wrap™ and tape the edges to the skin to prevent water from leaking in and getting the dressing wet. After showering, remove plastic wrap and pat the area dry with a towel. Do not rub dry. If the dressing gets wet, change the dressing immediately after bath or shower.
- Sometimes the dressing gets dirty, loose, or wet. If it does, you need to change the dressing. Check the dressing often to make sure it looks good.
- Change bed linens at least once a week, after the weekly dressing and cap change or if the linens are dirty.
- It is important to clean the cap with an alcohol pad for 20 seconds and let it dry for 10 seconds **EVERY TIME YOU USE IT** to keep the germs from getting in the line.

What else should we know about the CVC?

- Only use medical tape that your child is not allergic to.
- Do not use any other type of tape such as Scotch tape™, duct tape, electrical tape, or packing tape.
- No swimming or dunking the CVC under the water.
- No contact sports or rough play. This can break the CVC.
- Always keep the clamp on the line closed when not using it.
- If your child goes to school, give information about the CVC to the school nurse.

- Please provide a blue clamp & emergency kit for the school nurse. Let them know what activities are allowed or not allowed.
- Always travel with a blue clamp in case of an emergency.
- When you leave your child with someone make sure they know how to care for the CVC in an emergency.
- You may need a second person to help hold a small child, so they don't touch or pull on the CVC when you are giving medication or changing the dressing.

When will the CVC be removed?

When you/your child no longer needs the CVC, the doctor or specially trained nurse will take it out. Taking a CVC out is usually a short procedure, about 15-20 minutes. The entire process in the operating room under general anesthesia can take anywhere from 30 minutes to 1 hour. This time includes placing your child on the monitor, putting them to sleep and waking them up.

What happens if I'm not close to CHLA and have to go to another hospital?

If you have to go to another hospital, you may have to teach proper CVC care. Do not let anyone touch the line without proper handwashing and cleaning of the CVC before using it. Ask the healthcare team if you can do the CVC care yourself when necessary.

HANDWASHING: How do I wash my hands?

Good handwashing is the #1 way to prevent infection.

#1: Use antibacterial soap and wash hands completely for **30 seconds**.

- Make sure you rub your hands together well. Friction kills germs!
- Wash each finger, including the thumb and under each nail.
- Make sure your nails are clean. You may need to use a nailbrush to clean them.
- Make sure your hands are healthy with no cuts or rashes.

#2: Dry your hands with a paper towel and use the paper towel to turn the faucet off.

#3: When using anti-bacterial hand sanitizer, be sure to scrub hands until dry.

How do I flush the CVC and give medication?

S-A-S-H

S=Saline (salt water)

A=Antibiotic or Administer medicine

S=Saline (salt water)

H=Heparin (stops CVC from clotting)

Supplies needed:

- 2 normal saline syringes
- 1 heparin syringe (dose based on weight)
- 4 alcohol pads
- Medicine and supplies for giving medicine

1. Wash your hands for **30 seconds** with soap and water and use paper towel to dry. Clean your work area, take syringes out of the plastic packages, and lay on the clean table.
2. Open the CVC clamp.
3. Use hand sanitizer after opening packages of supplies and before you use the alcohol prep pad.
4. Clean the CVC cap with an alcohol pad for 20 seconds and let dry for 10 seconds.
5. Without letting go of the CVC, pick up the **NORMAL SALINE** syringe. With the cap on, pump the barrel of the syringe. Then take off the cap and push the air gently out of the syringe.

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Attach the syringe, flush with 10mL normal saline (or amount the doctor or nurse say is appropriate). Remove the empty syringe.

6. Clean the cap again with a new alcohol pad for 20 seconds and dry for 10 seconds.
7. Attach the **ANTIBIOTIC** or medicine tubing to the CVC cap.
8. Give the medicine as taught by your home care nurse.
9. When the medicine is done, disconnect the syringe or tubing and throw away as taught by your home health nurse.
10. Wash hands and clean cap with a new alcohol pad for 20 seconds and let dry for 10 seconds.
11. Without letting go of the CVC cap, pick up the next **NORMAL SALINE** syringe. With the cap on, pump the barrel of the syringe. Then take off the cap and push the air gently out of the syringe. Attach the syringe and flush 10mL normal saline (or amount the doctor or nurse say is appropriate) and remove empty syringe.
12. Clean cap again with new alcohol pad for 20 seconds and let dry for 10 seconds.
13. Without letting go of the CVC, pick up the **HEPARIN**. With the cap on, pump the barrel of the syringe. Then take off the cap and push the air gently out of the syringe. **Discard 2mL of the heparin** into a paper towel or trash can (it comes in 5mL syringes and you only need 3mL). Attach the syringe, flush with 3mL heparin, and remove the empty syringe.
14. Close the clamp.

****If you are not using the CVC for medicine, you need to flush the line with **NORMAL SALINE** and **HEPARIN** once a day to keep it working.**

- Follow the same cleaning steps as explained above. It is best to do this at the same time each day, in the morning, so that you can come to the hospital if there is a problem with the line.
- Flush each lumen with 5-10mL normal saline (ask your medical team for correct amount of saline) and 3mL Heparin every day. If you or your child has 2 lumens, be sure to repeat the steps for the second lumen.

CVC Problem Solving

PROBLEM	WHY IT HAPPENS	WHAT TO DO
Fever, chills, soreness, redness, swelling or pus at the insertion site.	<ul style="list-style-type: none"> • Infection 	<ul style="list-style-type: none"> • Take temperature • Call doctor right away or go to the Emergency Department (ED).
Red skin or rash where the tape is	<ul style="list-style-type: none"> • Allergy or sensitivity to tape 	<ul style="list-style-type: none"> • May need to have dressing or tape changed. • Notify your nurse or doctor so someone can check the skin.
CVC will not flush	<ul style="list-style-type: none"> • Line may be clamped • Line may be twisted or bent • Line may be clotted 	<ul style="list-style-type: none"> • Unclamp the line. • Remove the twist. • If still unable to flush, call doctor as soon as possible or go to the ED. • Remember, when flushing the line, NEVER USE FORCE. Using force can break the line.
CVC is leaking	<ul style="list-style-type: none"> • Cap is not screwed on tightly. • A tear in the line, which may happen above the white plastic clamp. 	<ul style="list-style-type: none"> • Tighten the cap. • Check line for tears. • Clamp line (closest to the body) immediately. • If you see a leak, wrap it with sterile gauze & secure with blue clamp. • If you don't have a blue clamp, fold line in half and tape it down to the skin. • Call doctor right away or go to the ED. • Remember to make an emergency kit and keep a blue clamp with your child at all times.
CVC accidentally comes out		<ul style="list-style-type: none"> • If line is completely out, put sterile gauze over the site. If bleeding, press down until it stops. • If line is partly out, DO NOT push the line back in. Use gauze and tape the line to keep it in place. • Call doctor right away or go to the ED.
Cap comes off		<ul style="list-style-type: none"> • CLAMP THE LINE RIGHT AWAY!

		<ul style="list-style-type: none">• Clean hub with alcohol for 20 seconds, wrap end in sterile gauze and tape to secure.• Change the cap as previously taught.• Monitor for signs of infection.
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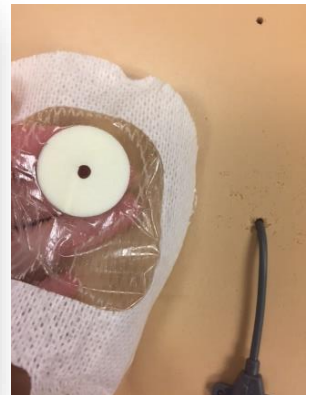
CVC Dressing Change

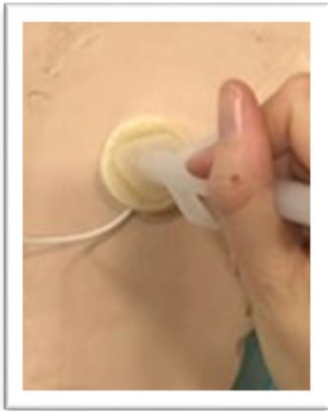
- Change the dressing weekly (every 7 days), or when dirty, damaged, or wet.
- Gather supplies and place on a clean surface:
 - Chloraprep™ swab
 - Biopatch® dressing
 - 2 Cavilon™ Skin Prep
 - Transparent adhesive (Tegaderm™ or IV 3000)
- Wash hands.
- Open packages carefully & use hand sanitizer after you open the packages.



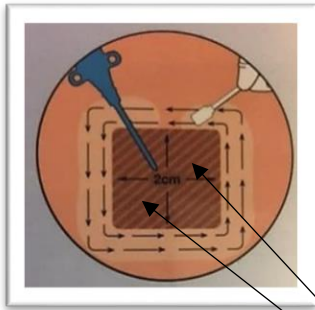
Steps for a CVC dressing change:

1. Remove the old dressing.





2. Use hand sanitizer after taking the dressing off.
3. Clean site up, down, and across for 30 seconds with Chloraprep™ swab.
4. Clean the clamps last & then throw the swab away.



5. Wipe Cavilon™ on the skin where the dressing goes, avoiding the area right around the insertion site (2 cm). Don't use Cavilon™ where the Biopatch® goes. Wipe the skin, moving away from the center. Do not go back over the area you already wiped the Cavilon™ on.

Do not use the Cavilon™ in this brown area (as shown in the picture)

Stress point



6. Loop the catheter.
7. Place the Biopatch®.
 - Open split and clamp onto line but don't place the line through the hole of the Biopatch®.

OR

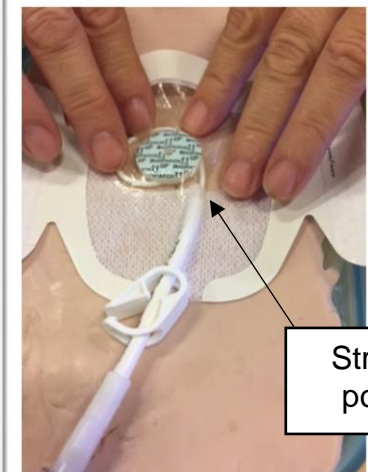
 - Place Biopatch® flat on top of the line (place hole on top of where the line exits the body).



8. Hold the dressing like a taco and cover the line. This is the called, the “shirt”.



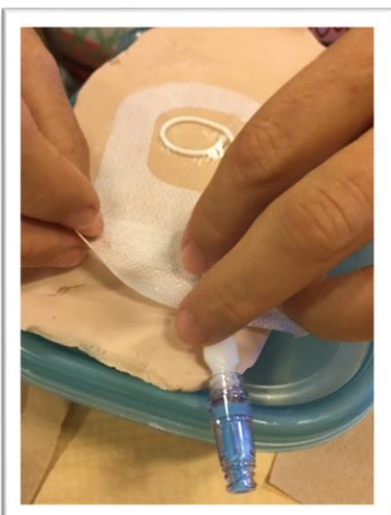
9. Try and keep the Biopatch® and looped part of the line in the “window”. Press down in the center over the Biopatch® and then press down on the dressing all around the edges.



10. Make sure the “stress point” is under the dressing.



11. The “shirt” is the large part of the dressing with the window in it. When you peel the paper off around the edges, follow with your finger to make sure the dressing is secure on the skin.



12. Place the “pants” on the dressing under the line and as close to the “shirt” as possible. Someone may need to hold the line up so you can put the “pants” under the line but on top of the “shirt”.



13. Add the “belt” on top of the line. Pinch on each side of the line so it is very secure.



14. Use second Cavilon™ to rub around edges of the dressing to prevent it from peeling up and to help it stick better.



This is what the dressing should look like when you are done.

CVC Cap Change

- Change the cap weekly (after the dressing change), when dirty or if it falls off.
- Wash your hands and gather supplies and place them on a clean surface:
 - 2x2 sterile gauze
 - 2 alcohol prep pads
 - Sterile cap
- Wash hands or use hand sanitizer after opening packages.



Steps for a cap change:

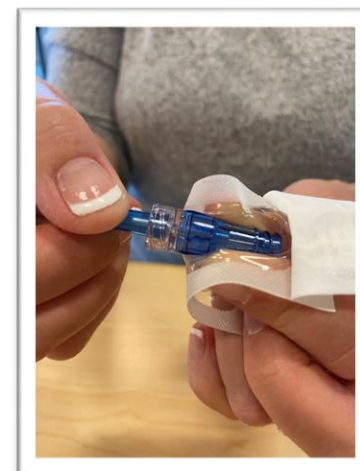


1. Peel open the gauze package without touching the inside of the wrapper.

2. Carefully pull the gauze apart (split into 2 pieces) and place a piece of gauze on each side of the wrapper.

3. Place an alcohol pad on top of each gauze.

4. Carefully remove the plastic device from the cap.



5. Place the cap back into the sterile packaging without touching the end of the cap or the inside of the package.

6. Make sure the clamp is closed before changing the cap.

7. Clean the hub with the first alcohol prep pad and gauze for 20 seconds and remove the cap. You will be cleaning where the cap and the hub meet.





8. Scrub the open end of the line with the second alcohol pad and gauze for 20 seconds and let dry for 10 seconds.



9. Replace with the new cap. Make sure it's tight when you put the new cap on.

10. Perform daily flush after the dressing and cap change.

Caring for the CVC at Home

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Ask your nurse to help you fill this out before you go home:

CVC placed on (date): _____

_____ 1 lumen _____ 2 lumens

Type of catheter:

_____ Single/double lumen permanent (Broviac)

_____ Double lumen permanent (Hickman)

_____ Apheresis MedComp (>10kg)

_____ Pheresis Powerline (<10 kg)

_____ Port-A-Cath

Home Health Agency: _____

Nurse/Contact name: _____

Phone number: _____

How do I get my CVC supplies?

My CVC Supply Company/Vendor: _____

Phone Number: _____

We will work with you to make sure you get the CVC supplies you need from the medical supply company. They will send supplies to CHLA or to your home. Make sure you call them when you are running low on supplies. You must call at least 3 days before your supplies run out.

How do I store the CVC supplies?

- Keep them in a clean, dry place, out of reach of children and pets.
- Do not store supplies in the kitchen or bathroom.
- It is easier to do your child's CVC care if your supplies are organized.
- Create supply kits by labeling Ziplock™ bags and fill with supplies needed for to give medication or flush the line.
- Once used, do not reuse any supplies.

Emergency Kit

(RN please prepare this kit prior to DC home)

Blue clamp
(1) 2x2 gauze
(2) alcohol pads
(1 roll) medical tape.

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