

# Central venous access device (CVAD) care



## This teaching sheet can help you learn how to:

- Describe what type of CVAD your child has – page 1
- Flush the line – page 3 to 4
- Change injection caps – page 5 to 6
- Change the dressing – page 7 to 10
- Protect the line – page 11
- Know when to call the doctor – page 12

**NOTE:** The pictures shown in this teaching sheet may not look exactly like your child's CVAD. They are meant to give you an idea of how it could look.

## What is a central venous access device (CVAD)?

A central venous access device (CVAD) is a special type of I.V. (intravenous) line used to give fluids, blood products and medicines. The end of the line lies near the heart in one of the body's large veins. Since it is so close to the heart, it is important for your child's safety to take good care of the CVAD.

## What are the different types of CVADs?

There are many types of CVADs. Some include:

- Non-tunneled, non-cuffed, low-flow (PICC)
- Tunneled, non-cuffed, low-flow (CVL)
- Tunneled, cuffed, low-flow (Broviac or Hickman)
- Tunneled, cuffed, high-flow (Permcath)

The names of these CVADs describe how the line is placed in the body, how it is secured in the skin tissue, and how fast fluids can move through the line.

Some CVADs are also power injectable. This means the line will not break when fluid is pushed through it in a small volume but at a high speed. It can be used during a CT or MRI scan so your child should not need an extra I.V. placed.

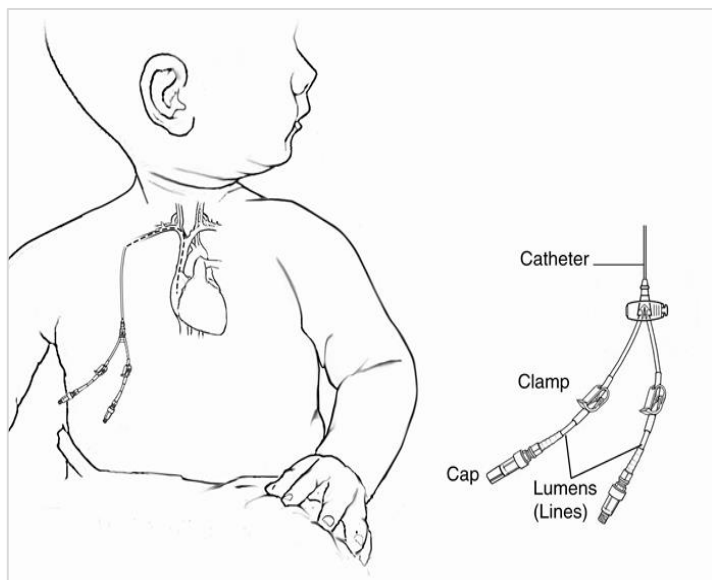
Talk with your child's doctor about why your child needs a CVAD. Ask the doctor or nurse to fill in the blanks below with your child's line type and size, as well as whether or not is power injectable.

Type of Line	Size (French)	Power Injectable (Yes or No)

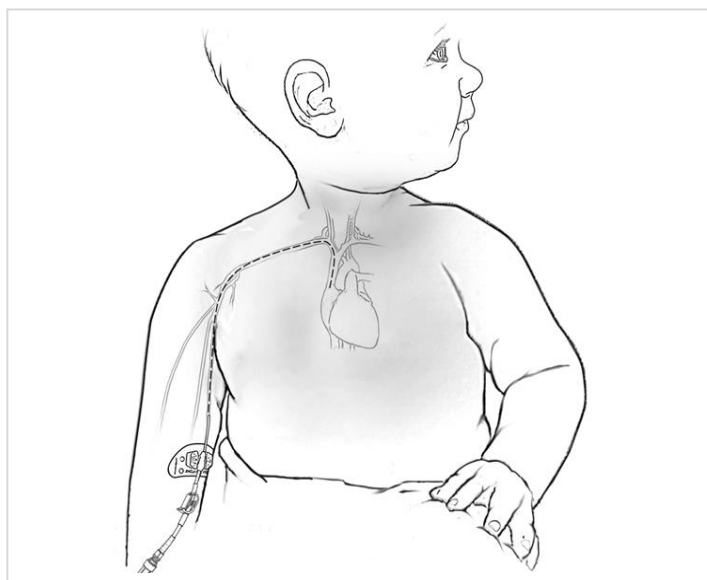
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## Central venous access device (CVAD) care, continued

### CVAD Placement Examples



Tunneled, non-cuffed, low-flow (CVL)



Non-tunneled, non-cuffed, low-flow (PICC)

### CVAD Care Chart

CVAD Care	Why do I do this?	When should I do this?
Flush the line	<ul style="list-style-type: none"><li>To help prevent the line from getting clogged with blood or medicines</li><li>To help prevent infections</li></ul>	<ul style="list-style-type: none"><li>3 times each week at regular times, such as Monday, Wednesday and Friday</li><li>Before and after each use</li></ul>
Change injection caps	<ul style="list-style-type: none"><li>To keep germs from growing in the injection cap</li><li>To keep the injection cap clear of blood or medicines</li></ul>	<ul style="list-style-type: none"><li>1 time each week when you change the dressing</li><li>1 time each day <b>IF</b> your child gets blood products or I.V. lipid products</li><li>As advised by your child's doctor</li><li><b>Right away</b> if it becomes dirty or falls off</li></ul>
Change the dressing	<ul style="list-style-type: none"><li>To clean the skin site and prevent infections</li></ul>	<ul style="list-style-type: none"><li>1 time each week</li><li><b>Right away</b> if it becomes wet, dirty, loose (edges are coming up or dressing is not sticking to the skin) or falls off</li></ul>

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# Central venous access device (CVAD) care, continued

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## Part 1 Flushing the line

### Why do I need to flush my child's line?

Your child's line can become clogged with blood or medicines if fluid stays inside the line for too long.

- Flushing the line is when you push sterile fluid with a syringe into the CVAD.
- This helps prevent clots that could block the line.

If your child has a high-flow line:

- It is locked with a high concentration of heparin to prevent the line from clogging.
- It is most often marked with a colored cap (red) and a sticker (labeled as HIGH DOSE heparin and most often pink) at the end of the line.
- **Please contact your care team before you use the line at home to ensure it is safe.**

### When do I flush my child's line?

Flush your child's line:

- 3 times each week at regular times, such as Monday, Wednesday and Friday.
- Before and after each use.
- If your child gets fluids at all times: flush with saline only (not heparin) before connecting the line to new tubing.

### How do I flush my child's line?

Most often, you will use these supplies to flush your child's line:

- 2 cleaning wipes (like CHG or alcohol) for each line
- Pre-filled syringe with saline for each line
- Pre-filled syringe with correct dose of heparin for each line
- Watch or clock with a second hand
- Clean gloves
- Alcohol impregnated protective cap (like Curo) for each line

### Get ready

1. Gather supplies.
2. Remove jewelry and roll up any sleeves.
3. Wash your hands well with soap and water for 30 seconds. Wash between each finger and under your nails. Rinse and dry your hands well. Or you may use alcohol-based gel or foam if you do not see dirt on your hands.
4. Put on clean gloves.

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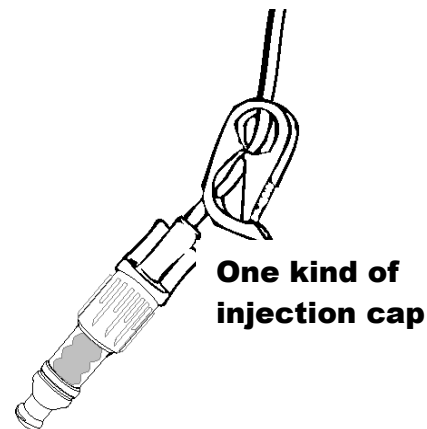
## Central venous access device (CVAD) care, continued

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### Flush with saline

How much saline do I use? \_\_\_\_\_ mL

**NOTE: If your child is getting ethanol locks, please see the Ethanol Locks teaching sheet before proceeding. Talk with your nurse if you have more questions.**



**One kind of injection cap**

5. Remove alcohol impregnated protective cap.
6. Scrub injection cap on line for 15 seconds with cleaning wipe using friction.
7. Allow injection cap to dry for 15 seconds. Do not touch, wipe, fan or blow on injection cap to help it dry.
8. Remove top of saline syringe and remove any air bubbles from syringe.
9. Attach it to clean injection cap. Make sure that neither the injection cap nor the syringe tip touches anything, including your fingers. If it does, throw it away and start over.
10. Open clamp and slowly push saline into your child's line. Close clamp while pushing the last 0.5 mL into your child's line.
11. Remove syringe from line and throw it away.

### Flush with heparin

How much heparin do I use? \_\_\_\_\_ mL \_\_\_\_\_ units/mL

12. Scrub injection cap again for 15 seconds with cleaning wipe using friction.
13. Allow injection cap to dry for 15 seconds. Do not touch, wipe, fan or blow on injection cap to help it dry.
14. Remove top of heparin syringe and remove any air bubbles from syringe.
15. Attach heparin syringe to clean injection cap. Make sure that neither the cap nor the syringe tip touches anything, including your fingers. If it does, throw it away and start over.
16. Open clamp and push heparin into your child's line. Close clamp while pushing the last 0.5 mL into your child's line.
17. Remove syringe from line and throw it away.
18. Place new alcohol impregnated protective cap on injection cap.
19. **Always push the heparin in last.** This helps to prevent a blood clot from forming in the line.
20. If your child has more than 1 line, repeat these steps for other lines.

### What should I do if the line will not flush?

- Make sure the line is not clamped.
- If the clamp is open, disconnect and reconnect your syringe.
- **NEVER** force fluid into your child's line. This could cause a hole or break in your child's line. **If your child's line will not flush - stop what you are doing and call your child's doctor.**
- If your child's line seems harder to flush than normal, call your child's doctor. Your child may need medicine to dissolve a blood clot that may be forming in the line. This needs to be done by a nurse.

**In case of an urgent concern or emergency, call 911 or go to the nearest emergency department right away.**

# Central venous access device (CVAD) care, continued

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## Part 2

### Changing injection caps

#### Why do I need to change the injection cap of the line?

It is important to change the injection cap to help:

- Keep germs from growing in it.
- Keep the injection cap clear of blood or medicines.

#### When do I change the injection cap?

Change the injection cap:

- 1 time each week at the same time you change the dressing.
- 1 time each day if your child gets blood products or I.V. lipid products.
- As advised by your child's doctor.
- **Right away** if it becomes dirty or falls off.

#### How do I change the injection cap?

Most often, you will use these supplies to change the injection cap on your child's line:

- 2 cleaning wipes (like CHG or alcohol) for each line
- Mask for everyone in the room, including your child
- 1 injection cap for each line
- Watch or clock with a second hand
- Clean gloves
- Alcohol impregnated protective cap, like Curo, for each line
- Pre-filled syringe with saline for each line
- Pre-filled syringe with correct dose of heparin for each line

#### Get ready

1. Gather supplies.
2. Remove jewelry and roll up any sleeves.
3. Put a mask on yourself and everyone in the room, including your child.
4. Wash your hands well with soap and water for 30 seconds. Wash between each finger and under your nails. Rinse and dry your hands well. Or you may use alcohol-based gel or foam if you do not see dirt on your hands.
5. Put on clean gloves.

#### Scrub injection cap and flush with saline

6. Open injection cap package and 2 cleaning wipes.
7. Remove new injection cap from package. Push 0.5 mL saline into it. Hold injection cap between your fingers and do not touch the end that will screw onto the line.
8. **Scrub 1** – Scrub connection between the line and injection cap with cleaning wipe for 15 seconds. Allow to dry for 15 seconds. Do not touch, wipe, fan or blow on it to help it dry.
9. Make sure the clamp on the line is closed.
10. Remove old injection cap from line.

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## Central venous access device (CVAD) care, continued

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11. **Scrub 2** – Scrub injection cap with a new cleaning wipe for 15 seconds. Allow to dry for 15 seconds. Do not touch, wipe, fan or blow on it to help it dry.
12. **Make sure the end of the line does not touch anything while drying, including your fingers.** If it does, scrub it again with cleaning wipe before attaching a new injection cap to your child's line.
13. Screw new injection cap onto the line.

### Flush with heparin

How much heparin do I use? \_\_\_\_\_ mL \_\_\_\_\_ units/mL

14. Scrub new injection cap for 15 seconds with cleaning wipe using friction.
15. Allow injection cap to dry for 15 seconds. Do not touch, wipe, fan or blow on the injection cap to help it dry.
16. Remove top of heparin syringe and remove any air bubbles from syringe.
17. Attach heparin syringe to clean injection cap. Make sure that neither the cap nor the syringe tip touches anything, including your fingers. If it does, throw it away and start over.
18. Open clamp and push heparin into your child's line. Close clamp while pushing the last 0.5 mL into your child's line.
19. Remove syringe from line and throw it away.
20. Place new alcohol impregnated protective cap on injection cap.
21. **Always push heparin in last.** This helps to prevent a blood clot from forming in the line.
22. If your child has more than 1 line, repeat these steps for other lines.

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## Central venous access device (CVAD) care, continued

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### Part 3 Changing the dressing

#### Why do I need to change the dressing and clean the skin around the line?

Changing the dressing and cleaning the skin around your child's line helps prevent infection.

#### When do I change the dressing?

Talk with your child's nurse about whether you need to learn how to change the dressing at home.

Change the dressing:

- 1 time each week.
- **Right away** if the dressing becomes wet, dirty, loose (edges are coming up or dressing is not sticking to the skin) or falls off.
- If the antimicrobial disc, like Biopatch, becomes swollen.

#### How do I change the dressing?

Your supplies may be different at home, but please follow your home care instructions as closely as possible. Call your child's home health company if you have any questions about your supplies. Call your child's doctor if you have any other questions.

Most often, you will use these supplies to change the dressing and clean the skin around the line:

- Sterile cleaning agent, such as Chloraprep (CHG) swab\*\*
- Clear, sterile dressing, such as Tegaderm, Opsite or Silicone based dressing
- Biopatch or other type of antimicrobial patch
- Clean gloves
- Sterile gloves
- Mask for everyone in the room, including your child
- Extra sterile tape or skin closures, such as Steri-Strips, if used
- Sterile anchoring device, such as Statlock or Griplock, if used
- Tissue adhesive (antimicrobial glue), such as SecurePort, if used
- Skin prep
- Alcohol-based gel or foam hand cleaner
- Watch or clock with a second hand
- Small trash can

#### Get ready

1. Gather supplies. Take your child to a quiet place away from other people and pets. No one else should be in the room except your helper. This will help to make sure that your supplies stay clean.
2. Prepare a hard, flat surface by cleaning it well with a sanitizing wipe. Allow the surface to dry all the way.
3. Remove your child's shirt if needed.
4. Remove jewelry and roll up any sleeves.

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## Central venous access device (CVAD) care, continued

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5. Put a mask on yourself and everyone in the room, including your child.
6. Wash your hands well with soap and water for 30 seconds. Wash between each finger and under your nails. Rinse and dry your hands well. Use a paper towel to turn off the sink.
7. Put on clean gloves.
8. Your child and the helper will also need to wash their hands and wear a mask, even if they do not touch the dressing site.
9. Open the dressing change kit. Use sterile technique and add any other items to the sterile field as needed. Ask your child's nurse to show you how to create a sterile field.

### Remove old dressing

1. **Carefully** remove old dressing without pulling on the line. Peel dressing toward the line insertion site (where the line enters the skin). Have someone help hold your child or the line if needed.
  - **Do not** touch the area under the dressing
  - **Do not** use scissors to remove tape from the line. You could accidentally cut the line.
2. If your child has an anchoring device outside of the dressing area, remove old anchoring device from the skin and the line with alcohol wipes or adhesive remover.
3. Check area around the line for signs of infection. Call your child's doctor **right away** (after you finish the dressing change) if you see any:
  - Redness.
  - Swelling.
  - Drainage.

Also call if your child has:

- Pain at the line site.
  - Fever of 100.4°F or higher, or as advised by your child's doctor.
4. Remove dirty gloves.
  5. Wash your hands well with soap and water for 30 seconds. Wash between each finger and under your nails. Rinse and dry your hands well. Use a paper towel to turn off the sink. If you do not have a helper, use alcohol-based gel or foam to clean your hands. Do not leave your child to wash your hands at the sink.
  6. Put on sterile gloves using sterile technique. Ask your child's nurse to show you how to put on sterile gloves.

### Clean the site

1. Use sterile cleaning agent [such as Chloraprep (CHG) swab] to clean the skin around your child's line. **\*\*Talk with your child's care team about what to use if your child has an allergy to CHG.**
  - Hold the line in 1 hand using sterile gauze from the kit. With the other hand, use the CHG swab. Scrub using friction, starting at the line insertion site and moving outward.
  - Using the same CHG swab, scrub the skin in a back and forth motion for 30 seconds over the entire dressing area. Use friction and a back and forth motion to make sure the CHG gets into many layers of skin.
  - If there is an anchoring device in the area of the dressing, remove using CHG swab.
  - If there is a second CHG swab, clean the line insertion site again. Then, clean the line itself with the same swab – start at the line insertion site and move towards the injection cap.

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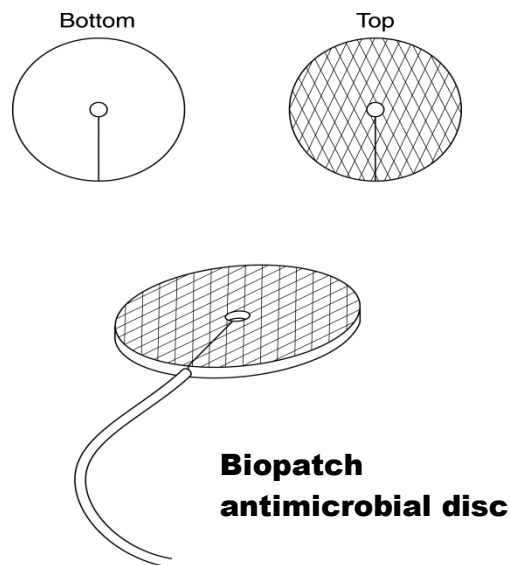


## Central venous access device (CVAD) care, continued

2. After cleaning, allow the area to dry all the way for at least 30 seconds. Do not wipe, fan, blow or wave your hand over the site to help it dry. This just moves germs around in the air.
3. If there is a skin protectant in your kit, blot this onto the skin where the dressing will touch the skin. Allow to dry.

### Put on new dressing

1. Place Biopatch at the line insertion site with the antimicrobial agent side down and slit facing the line insertion site.
2. Push Biopatch down around the line hub with your fingers. Make sure the Biopatch surrounds the hub as much as possible.
3. Place new clear, sterile dressing (such as Tegaderm, Opsite or Silicone based dressing) over the line insertion site. Make sure the clamp is not under the dressing. You need to be able to use the clamp at all times.
  - If the dressing has a slit in it, lift the line up and overlap both sides of the dressing under the line to seal the area well.
  - Place 1 to 2 skin closures (such as Steri-Strips) or pieces of tape over the slit.



**NOTE:** If the sterile dressing does not fit, **DO NOT** use scissors to cut the dressing. Call your child's home health company or nurse for the correct size sterile dressing.

### Place anchoring device (if used)

If you use an anchoring device, such as Statlock or Griplock, place it on the skin close to the sterile dressing. This can be used to direct the line away from things that may lead to a line infection, such as G-tubes, ostomies or diapers. It can also be used to support the weight of the line.

To place anchoring device:

1. Put skin prep on the skin where you will place the device.
2. Allow skin to dry.
3. Place anchoring device onto the line.
4. Peel off the backing on the device, 1 side at a time.
5. Place device on the skin, 1 side at a time.

### Clean up and write down the date

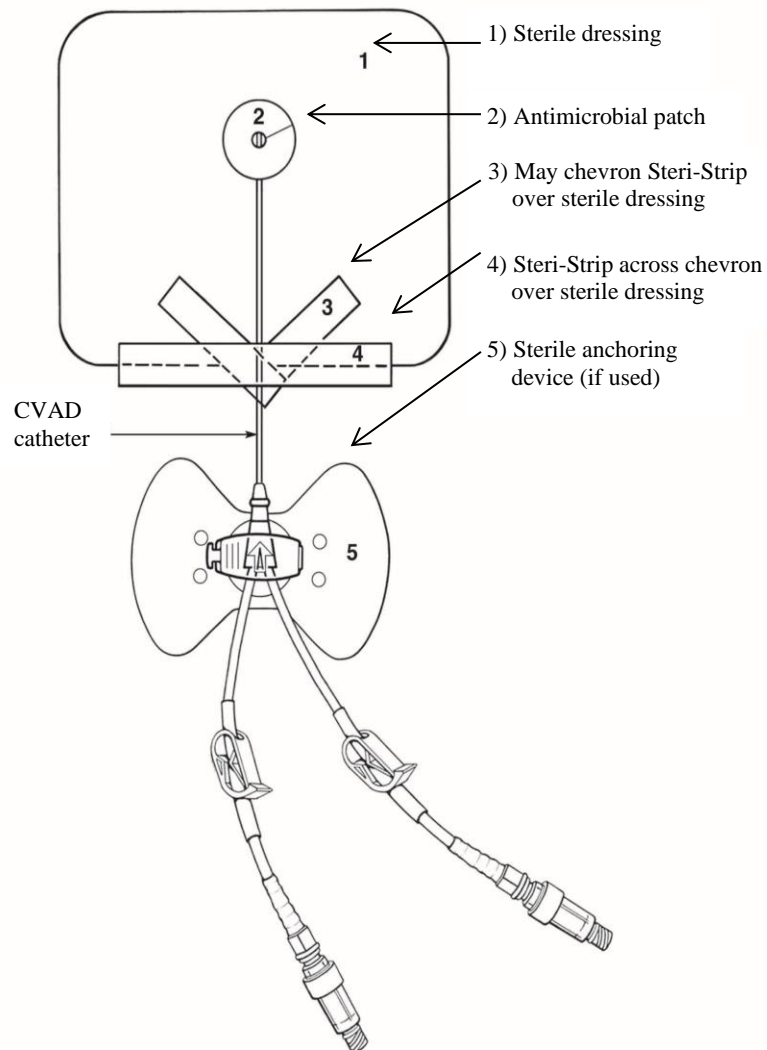
1. Remove gloves and throw away supplies. Wash your hands. Mark the date on the edge of the dressing and on the calendar. This way, you and your child's nurse will know when to change the dressing again.
2. Change the dressing in 1 week or **right away** if it gets wet, dirty, loose (edges are coming up or dressing is not sticking to the skin) or falls off.

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## Central venous access device (CVAD) care, continued

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### Dressing with Anchoring Device



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## Central venous access device (CVAD) care, continued

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### Part 4 Helpful tips

#### How do I protect the line when bathing my child?

Your child may shower or take baths at home if the line is protected from water. For baths, do not allow the water to rise above the bottom of the protected dressing.

- The dressing is not waterproof.
- Protect the line, including injection caps, by covering it with Press-N-Seal plastic wrap, Saran wrap, AquaGuard or a plastic bag taped to your child's chest or arm (depending upon where the line is placed).

#### What should I do if the line breaks?

If your child's line breaks, blood will most often flow back out of the line. If this happens:

- Stop the blood flow right away by clamping the line.
  - If the clamp is still on the line, close it between the hole or break and your child to stop the blood flow.
  - If the clamp is not on the line, fold the line over itself and pinch it with your fingers. Use a rubber band, a piece of string or tape to hold the line closed tightly.
  - If you were given clamps, use them to clamp the line between the hole or break and your child.
- Wrap the broken end of the line in gauze. If sterile gauze is available, please use it. If not, use non-sterile gauze or similar material to wrap the end of the line.
- **Call 911 or go to the nearest emergency department (ED) right away - this is a medical emergency.**

#### What should I do if the line comes out?

If the line comes out all the way:

- Have your child lie flat.
- **Hold continuous pressure with your hand or whatever else is nearby (like a paper towel or tissue) for at least 5 minutes without stopping to look at the site.** If bleeding continues, you may repeat this step as many times as needed to get the bleeding to stop.
- If you have them, cover the hole (line insertion site) with sterile single-use petroleum jelly, sterile gauze and a clear, sterile dressing (such as Tegaderm, Opsite or Silicone based dressing). If you do not have supplies, cover it with a dressing or bandage.
- Then, call your child's doctor right away.
- Have your child keep lying flat for at least 30 minutes or as long as your doctor directs.
- Save the line to give to your child's doctor.

If the line only comes out slightly:

- **DO NOT** try to move the line back into the body.
- Call your child's doctor right away. Your child may need an X-ray to make sure the line is still in the right place near the heart.

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## Central venous access device (CVAD) care, continued

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### When should I call the doctor?

Call your child's doctor **right away** if your child has:

- Redness, swelling, tenderness, pain or drainage at the line insertion site (where the line enters the skin).
- Swelling of the arm, neck or chest.
- **Fever of 100.4°F or higher.**
- Chills or flu-like symptoms.

Also call if you have any questions or concerns about how your child looks or feels.

Call your child's doctor **right away** if the line:

- Leaks when giving medicine or flushing it.
- Looks like it is coming out or the stitches break.
- Looks like it is coming apart but is not leaking.
- Will not flush or seems hard to flush.
- Antimicrobial patch, like Biopatch, becomes soaked with blood.

Also call if you have any questions or other concerns about the line.

**This teaching sheet contains general information only. Talk with your child's doctor or a member of your child's healthcare team about specific care of your child.**

**In case of an urgent concern or emergency, call 911 or go to the nearest emergency department right away.**

# Central venous access device (CVAD) care, continued

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## Your checklist

This list can help you keep track of what you need to know about your child's line before your child goes home. Ask your child's nurse or doctor for help if you need more information.

**NOTE:** Your supplies may be different at home, but please follow your home care instructions as closely as possible. Call your child's doctor if you have any questions.

### Before your child goes home, make sure that you know:

- Why your child has a line.
- What supplies you need and how to get them.
- When to call the doctor for questions or concerns.
- Phone numbers for your child's doctor and home health company.
- When and where your child's CVAD supplies will be delivered.

### Also know:

- When and how to wash your hands.
- When and how to use a mask and sterile gloves.
- When and how to flush the line.
- What to do if the line will not flush or is hard to flush.
- When and how to change the injection cap.
- When and how to change the dressing.
- How to protect the line when bathing your child.
- How to secure the line.
- Signs of infection at the line site.
- What to do if the line breaks.
- What to do if the line comes out.
- Other problems to look for at the line site.

For more details on how to change a CVAD dressing, scan the QR code included below to watch a video on your cell phone or tablet.



### Notes:

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**In case of an urgent concern or emergency, call 911 or go to the nearest emergency department right away.**