Information Card

Catheter type: ________________________________
Catheter size: ________________________________
Insertion date: ________________________________

SCHEDULE OF PROCEDURES

**Clamp the catheter:** If your catheter has a clamp, keep it clamped whenever it is not in use.

**Site Care:** Change your dressing 24 hours after it was first inserted, then every seven days or more often if it becomes loose, wet or soiled.

**For patients less than 2 years old or those with skin sensitivities:** Change your dressing as recommended by your nurse or more often if it becomes loose, wet or soiled.

**Heparin flush:** Flush each lumen (tube) of your VAD every day, or as directed by your nurse.

**Needleless connector cap change:** Change the needleless connector cap on each lumen (tube) every seven days.

**Contact City of Hope immediately if you experience any of the following:** Fever 100.4° (38.0° C) or higher, chills, puffiness of the neck or face, exit site redness, swelling, tenderness or drainage, or have a damaged or leaking catheter.

**Call 911 if you have a life-threatening emergency**
Call 911 if you have problems such as shortness of breath, chest pain, uncontrolled bleeding, loss of consciousness or any symptoms that may be life-threatening.
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What Is an External Central Vascular Access Device?

The external central vascular access device (CVAD or simply VAD) is a long, hollow tube called a catheter. It is made of a soft material and inserted into a large vein leading directly to the heart. Some VADs have more than one tube, making it possible to receive several medications or fluids at the same time.

The VAD is inserted by a surgeon in the operating room. You will receive anesthesia and be asleep during the procedure. Two small openings are made into the skin, one near the collarbone and the other about six inches lower. The catheter will come out of the lower opening onto the chest, called the exit site. The catheter is tunneled beneath the skin between the two openings. The opening near the collarbone, called the insertion site, is where the catheter is threaded into the large vein leading to the heart.

A Dacron cuff, located between the two openings under the skin, is attached to the catheter and prevents bacteria from entering the bloodstream and holds the catheter in place. A slight bulge may be felt where the cuff is located.

Stitches are used at the exit site to prevent the catheter from slipping out of place. When your doctor feels the stitches are no longer necessary, they will be removed — usually in about six weeks. Once the sutures are removed, the Dacron cuff will then hold the catheter in place.
Why You Have a VAD

You and your doctor have chosen a VAD to give medications and fluids directly into your bloodstream without having a needle inserted repeatedly into the veins in your arms. Blood for most lab tests can also be drawn from your VAD.

Having a VAD will not cause a great deal of change in your lifestyle. However, swimming and activities that cause the exit site to soak in water (soaking in a bathtub or Jacuzzi) are not recommended.

Caring for your VAD is simple and takes only a few minutes. You will receive special instructions to care for your VAD from your nurse. It is also important for you to have a family member or friend learn how to care for your VAD in case there is a time when you do not feel well enough to care for it yourself. This care is very important and must be done on a regular basis to keep your VAD clean and working properly.

Please refer to this booklet while learning to care for your VAD. It has information that will help prevent problems and will help you solve any problems that may occur.

If a surgeon from another hospital inserted your VAD, it is likely that the care you were taught will differ from the method used at City of Hope. If your VAD is different from the type commonly used at City of Hope, your doctor or nurse will give you information about your particular VAD, how to care for it and what to do if problems occur.
If you have any questions, please ask your doctor or nurse; they are available to help whenever you need them.

You will find a list of telephone numbers to call for information and support on page 21.

**Taking Care of Your VAD**

Below are five things you will need to know to take care of your VAD:

- Clamping the catheter
- Exit site care
- Flushing the catheter
- Changing the needleless connector cap
- Problem solving

**Clamping the Catheter**

Your catheter is made from a soft material and can be cut or damaged easily. Never use scissors or sharp-edged clamps and avoid using any clamp not approved by your doctor or nurse.

**Clamping It**

*Always clamp the catheter when it’s not in use.*
*Avoid tension or pulling on it.*

Most catheters come with a preattached clamp and a thicker clamping area. Always clamp the catheter over this area. Clamp the catheter whenever it is not in use. Carry a spare clamp in your pocket.

Fasten the catheter to your clothing to avoid tension or pulling on the catheter. Your nurse will show you how to do this.
Exit Site Care

Exit site care, or cleaning the exit site and applying a new dressing, must be done on a regular basis. This prevents infection and allows you to inspect the skin and the exit site area. If your catheter was newly inserted, the dressing must be changed 24 hours after it was placed, then every seven days, or more often if it becomes loose, wet or soiled.

**Supplies:**

- Rubbing alcohol
- Clean paper towels
- A plastic bag for disposal of used items
- 1 chlorhexidine/alcohol applicator
- 1 chlorhexidine impregnated patch
- 1 transparent dressing
- Adhesive remover
- Skin barrier

**Procedure:**

1. Clean the work surface by wiping with a paper towel that has been moistened with rubbing alcohol. Wipe dry or allow to air dry.

2. Thoroughly wash your hands using warm, soapy water. Rinse completely and dry using a clean towel or fresh paper towels.

3. Remove the old dressing. Lift the bottom of the dressing first and pull gently upward toward your head, taking care not to pull on the catheter. Loosen the adhesive edges of the dressing with the adhesive remover.
4. Throw the old dressing away in a plastic bag. Wash your hands again. You must not skip this step. It is important to reduce the risk of infection.

5. Place all supplies on the clean work surface and open them.

6. Look carefully at the exit site and the skin around it. If you notice anything unusual, such as redness, swelling, drainage or tenderness, finish the exit site care and dressing procedure and then call your nurse or doctor.

7. You are now ready to clean the exit site.
   • Holding the chlorhexidine/alcohol applicator with the sponge facing downward, gently squeeze the wings to release the antiseptic solution into the sponge.
   • Do not touch the sponge.
   • Press the sponge against your skin and use an up-and-down scrubbing motion over the exit site.
   • Cleanse the skin starting at the exit site and work outward away from the catheter about two inches. Repeat this on the opposite side — again starting at the exit site and moving outward away from the catheter about two inches. Remove any crust or debris from around the exit site and catheter.
   • Scrub the exit site for 30 seconds and then let the area air dry completely.
8. Now you are ready to place the dressing.
   • Starting about 3/4 inch (2 cm) from the exit site, apply skin barrier to the skin around the catheter extending out to an area about the size of the dressing that you will be using. Do not apply the skin barrier around the catheter where the chlorhexidine impregnated patch will go. Allow the skin barrier to air dry completely.

   • Place the patch around the catheter with the smooth foam side down next to your skin and colored side up. Place it so that the catheter rests on top of the slit portion of the patch. This will make it easier to remove it next time you change the dressing. When placing the patch, the edges of the slit must touch one another to be effective.

   • Then place the transparent dressing over the exit site, catheter and patch. Begin by gently peeling away the transparent dressing from the backing leaving the window frame backing along the edges. Be careful not to touch the center inside of the transparent dressing.

   • Center the transparent dressing over your catheter exit site and place it sticky side down over the exit site and patch. Do not stretch the dressing when applying it to the skin. Smooth it in place. Remove the window frame and smooth the edges in place.

9. Secure the catheter using the safety loop method (see page 7).
10. If you find your skin becomes sensitive to the chlorhexidine solution, the patch or the dressing, talk to your nurse or doctor. Different products are available.

**Securing the Catheter Using the “Safety Loop” Method**

It is recommended that all patient lines be secured using the safety loop method. Children must always have the safety loop done.

**To Create the Safety Loop:**

1. Loop the catheter up from the exit site toward your head and place tape over the catheter.

2. Complete the loop so that the catheter hangs down and secure it with another piece of tape.
3. Fasten the catheter to your clothing carefully with a safety pin or catheter clamp.
   a. You can do this by cutting a piece of tape and folding the edges over to form tabs.
   b. Place the tape around the catheter away from the needleless connector cap.
   c. Do not cover the cap with the tape.
   d. Use the tabs to clamp or fasten the catheter to your clothing. Avoid tension or pulling on the catheter.

4. A T-shirt or BandNet is helpful to secure the line on a child.

**Contact your nurse or doctor immediately if:**

- There are any signs of infection around the catheter such as redness, swelling, drainage or tenderness.
- You have a fever higher than 100.4° (38.0° C).
- The catheter appears to be slipping out, you can see the Dacron cuff, or if the catheter is cut or broken.
- You have nausea, vomiting, dizziness or any other unusual symptoms.
Exit Site Care for Very Young Patients (Less Than 2 Months Old) or Those with Skin Sensitivities to Chlorhexidine, Chlorhexidine Impregnated Patch or Transparent Dressings

For patients less than 2 months old, or those with skin sensitivities, clean the exit site and change the dressing at least every two days, more often if the dressing becomes loose, wet or soiled. Proper exit site care helps prevent infection and allows you to check the opening and the skin around it.

**Supplies:**
- Rubbing alcohol
- Adhesive remover
- Plastic bag for disposal of used items
- 1 sterile 2”x2” gauze pad
- Tape
- 3 alcohol swabsticks
- 1 povidone-iodine (such as Betadine) swabstick
- Skin barrier
- Appropriate dressing as recommended by your doctor or nurse

**Procedure:**
1. Clean the work surface by wiping with a paper towel that has been moistened with rubbing alcohol.
2. Wipe dry or allow to air dry.
3. Thoroughly wash your hands using warm, soapy water.
4. Rinse completely and dry using a clean towel or fresh paper towels.
5. Remove the old dressing. Lift the bottom of the dressing first and pull gently upward toward your head, taking care not to pull on the catheter. Your nurse may recommend using an adhesive remover to help remove the old dressing.
6. Place in a plastic bag for disposal.

7. Wash your hands again. Never omit this step.

8. Place all supplies on the clean work surface and open them.

9. Look carefully at the exit site and the skin around it.

10. If you notice anything unusual, such as redness, swelling, drainage or tenderness, finish the dressing procedure and then call your nurse or doctor.

11. You are ready to clean the exit site.
   • Cleanse the exit site, catheter and surrounding skin area with an alcohol swabstick.
   • Begin at the exit site and work outward in a circular motion, covering a two-inch area from the exit site (see diagram). Never go back to the exit site with a swabstick that has touched skin away from it.
   • Repeat with a second alcohol swabstick.
   • Be sure to remove all crust and debris from around the exit site and catheter.
Cleaning the Exit Site with Povidone-iodine

Cleanse the exit site and surrounding skin area with one povidone-iodine swabstick in the same manner as above.

- Let air dry for a FULL 60 seconds. Do not fan or blow on the site. IT IS VERY IMPORTANT THAT THE POVIDONE-IODINE DRY FOR A FULL MINUTE BEFORE CLEANING OFF.

- Wipe off the povidone-iodine with the third alcohol swabstick, starting from the exit site out.

- Use a 2"x2" gauze pad to pat dry the surrounding skin until it is completely dry and the povidone-iodine is removed.

Remove the Povidone-iodine

Cleanse the povidone-iodine off with another alcohol swabstick starting from the exit site out.

12. Apply skin barrier.
13. Cover the exit site with the dressing selected by your nurse or doctor.
15. Fasten the catheter to your clothing.
16. If you continue to have skin problems with the cleansing solutions or dressings, your doctor or nurse will change the products and show you how to use them.
Contact your nurse or doctor immediately if:

- There are any signs of infection around the catheter such as redness, swelling, drainage or tenderness.
- You have a fever higher than 100.4° (38.0° C).
- The catheter appears to be slipping out, or if it is cut or broken.
- You have nausea, vomiting, dizziness or any other unusual symptoms.
- You have any questions or concerns.

**Flushing the Catheter**

It is very important to flush your catheter once a day. Flush your catheter at about the same time every day. This will keep your catheter open and free of blood clots. Heparin, a medication that prevents blood from clotting, is used in most types of VADs.

If you have a catheter that is different than what is commonly used at City of Hope, your nurse will tell you how often to flush it and what type of flushing solution to use.

**Supplies:**

For each lumen (tube) of your catheter you will need:

- 1 alcohol prep pad
- 1 prefilled syringe (containing 3 ml of heparin that has 100 units/ml)
- A container (to throw away used syringes)
**Procedure for Flushing the Catheter**

1. Always start with a clean area for your supplies.
2. Open supplies.
3. Loosen the cover on the syringe. Be careful not to touch the tip.
4. Empty any air that may be in the syringe by holding it with the tip pointing upward. Gently push the plunger until all of the air is out.
5. Scrub the end of the cap with an alcohol prep pad vigorously for 15 seconds.
6. Insert the tip of the syringe into the needleless connector cap by pushing it in and turning it clockwise, 1/2 a turn.
7. Unclamp the catheter.
8. Slowly inject heparin into the catheter using a “push-pause” method. Do not use force. Leave a small amount of heparin in the syringe.
9. As you slowly inject the remaining heparin, clamp the catheter while maintaining forward pressure on the plunger. Your nurse will explain this technique.
10. Remove the syringe from the connector cap and place it into the disposal container.

**Flush Catheter**

*Do not use force.*
11. If your VAD has more than one lumen (tube), you must flush all of them.

**Syringe Disposal**
Carefully dispose of used syringes as instructed by your nurse or doctor. Make sure that used syringes are not accessible by children, pets or other people.

**Contact your nurse or doctor if:**

- You are unable to flush the catheter. (Make sure it is unclamped.)
- You experience chills when you flush the catheter.
- You see any damage, breaks or leaks in the catheter.
- The catheter appears to be coming out, or if you can see the Dacron cuff.
- You have nausea, vomiting, dizziness or any other unusual symptoms.
- You have any questions or concerns.
Changing the Needleless Connector Cap

The needleless connector cap is the only piece that you will have to change. Every time you take the cap off, throw it away and put on a new one. This should be done at least every seven days.

**Supplies:**

For each lumen (tube) of your catheter you will need:
- 1 new sterile needleless connector cap
- 3 alcohol prep pads
- 2 sterile 2”x2” gauze pads
- 1 prefilled syringe containing 3 ml. of heparin that has 100 units/ml.
- 1 prefilled syringe containing 10ml saline

**Procedure:**

- Always start with a clean area for your supplies.
- Wash your hands.
- Open your supplies. Place an alcohol prep pad on top of each 2”x2” gauze pad.
- Be sure the catheter is securely clamped.

You will need to prime the new needleless connector cap before you remove the old cap and attach the new one to your catheter.

**To prime the new connector cap, follow these steps:**

1. Open the package of the new connector cap and set aside.
2. Open the package of the saline syringe.
3. Loosen the cover on the syringe. Be careful not to touch the tip.
4. Empty any air that may be in the syringe by holding it with the tip pointing upward. Gently push the plunger until all of the air is out.

5. Attach the syringe to the needleless connector cap.

6. Inject a small amount of flush solution into the connector cap until you see it coming out of the end. The connector cap is now primed.

7. Leave the syringe attached to the connector cap and set them aside on a clean area. Using the clean package of the new connector cap is a good choice.

8. Proceed with the cap change procedure.

To complete the cap change procedure:

1. Hold the catheter end with one hand throughout the procedure.

2. Scrub the cap/catheter connection with the alcohol prep pad/2"x2" gauze pad vigorously for 15 seconds and remove the old needleless connector cap by twisting off.

3. Scrub the exposed catheter end with the second alcohol prep pad/2"x2" gauze pad for 15 seconds.

4. Remove protective cover then screw the new needleless connector cap with the syringe attached onto the catheter end. Do not touch the end of the catheter with your fingers.

5. Flush the catheter.

6. Remove the syringe by holding the connector cap with one hand.
while unscrewing the syringe with the other. This will prevent disconnecting the connector cap from the catheter end when removing the syringe.

7. Using the third alcohol pad, scrub the connector cap for 15 seconds, then flush the catheter with heparin as previously instructed.

8. Repeat the procedure for each lumen (tube).

9. Fasten the catheter to your clothing carefully with a safety pin or catheter clamp.

Contact your nurse or doctor if:

- You see any damage to the catheter end.
- There are any leaks around the needleless connector cap.
- You have any questions or concerns.
Problem Solving

Below is a list of problems and what to do if they occur.

- **Infection**
  This is the most common problem. You may have a fever of 100.4° F (38.0° C) or higher, chills, redness, swelling, tenderness or drainage at the exit site of your catheter. If you have any of these signs, call your nurse or doctor immediately.

- **Disconnected cap**
  Clamp the catheter immediately if it is open. Clean the end of the catheter with an alcohol prep pad and put on a new needleless connector cap. Follow the procedure for flushing the catheter with heparin on page 12.

- **Plugged catheter**
  If you feel any resistance when flushing your catheter, do not use extra force. Be sure it is unclamped. If you still feel any resistance, then call your nurse or doctor who will arrange to unplug the catheter.

- **Damaged catheter**
  If you see damage, breaks or liquid leaking from your catheter, find the area and clamp the catheter between the damaged area and your body. Wrap sterile gauze around the damaged area and immediately call your nurse or doctor. You will need to come to City of Hope to have the catheter repaired.

- **Catheter is coming out**
  If the catheter appears to be coming out, or if you can see the Dacron cuff when you are changing the dressing, complete the dressing change and then call City of Hope.
Frequently Asked Questions

- **Can I bathe?**
  Your doctor or nurse will tell you when to shower or bathe after your VAD is inserted. If you prefer a tub bath, keep the exit site above the water level.

  Cover the exit site, catheter and cap with a waterproof barrier when you bathe or shower. There are several items that you might use as a barrier, such as plastic wrap or a plastic bag secured with tape. There are also moisture barrier products commercially available that you can purchase. Your nurse will discuss these options with you.

- **Do I always need to use a dressing?**
  The exit site should always have some type of dressing or bandage on it. Your nurse will help you decide which one is best for you.

- **If I forget to flush the catheter on time, what should I do?**
  Flushing your catheter once a day will keep it open and free from blood clots. If you forget to flush it or are delayed, flush the catheter as soon as possible. If you experience difficulty flushing, contact your nurse or doctor immediately. Never use force to flush the catheter.

- **What happens if I cannot flush the catheter?**
  If you have difficulty flushing the catheter, check your equipment. Be sure the catheter clamp is open and that there are no kinks in the catheter. Check the plunger of the syringe. Rotate the plunger a quarter turn if you think the plunger is stuck. Remove the syringe and flush with a new syringe after scrubbing the connector cap with alcohol for 15 seconds. If the equipment is working and you still cannot flush using normal pressure, contact your nurse or doctor immediately. Never use force to flush the catheter.
• **What happens if the catheter is damaged?**

If your catheter leaks or tears, clamp it between the hole and your body and contact your nurse or doctor immediately. Usually, the catheter can be repaired using special equipment available at City of Hope.

• **Should someone else also learn these procedures?**

It is important to have another person available who is familiar with the care of your VAD. Then, if you cannot take care of it, the other person can do this for you. Make sure that someone else knows what to do if there is a problem.

### Using Disinfecting Port Protectors (Disinfecting Caps)

While you are at City of Hope, your nurse may place disinfecting port protectors on the needleless connector caps on the end of your catheter or on the unused injection ports of your IV tubing. These port protectors are used only while you are in the hospital and are **not** required for home use.

However, if you choose to use them at home, it is important to remember the following:

- NEVER reuse port protectors. Once they are removed they must be discarded.

- Port protectors are NOT waterproof. Replace them with new ones after you shower or if they get wet.

- City of Hope does not supply port protectors for home use. Contact the manufacturer or supplier to purchase them. A doctor’s order may be required. Please be aware that your insurance company might not cover these items.
If You Have Additional Questions or Need to Report Problems

Call City of Hope Nursing Triage Call Center, available 24 hours a day, seven days a week at 626-218-7133.

If you have a home health nurse:
Call the number of the home health agency given to you by your case manager.

Pediatric service patients:
Call the City of Hope operator at 800-826-HOPE (4673). Ask the operator to connect you to your pediatrician or the pediatrician on call.