

Patient Guide

# Caring for your r4 Vascular PICC



Clear Flow. Clear Vision. Clear Care.

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# What is a Peripherally inserted Central Catheter (PICC)?

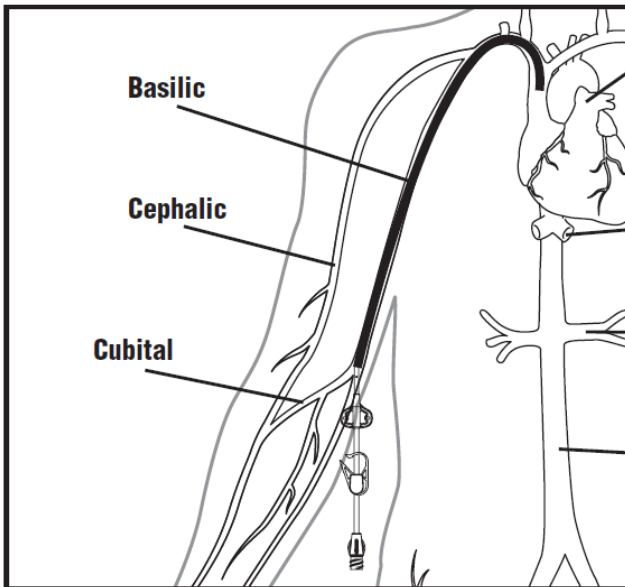
Peripherally inserted central catheters (PICCs) provide access to the venous system, as an alternative to a needle. Having the PICC will make it more comfortable for you because you will not have to have a needle inserted into a vein over and over again.

The PICC is used to give you special fluids, medications, blood products, to take blood samples for testing, or inject contrast media. Typically, a PICC is given to patients who need therapy extending over time. Your doctor or nurse will explain why you have a peripherally inserted central catheter.

## Where the PICC goes inside the body

The nurse or doctor inserts the PICC into a vein in your arm and threads it into a large vein that leads to your heart.

The catheter insertion site will need to have special care, this booklet contains further instructions.



# r4 Vascular Zeus PICC

## *What is the Biomimetic Coating?*

The Biomimetic coating is a patented technology available only from r4 Vascular. Biomimetic means imitating nature. This coating is intended to make the catheter appear more natural, in an attempt to slow the body's response to the inserted catheter. Typically the body responds by triggering a clotting response and collecting protein on the catheter surface, which may cause a PICC to stop functioning in some patients (similar to a drain becoming clogged). If this does occur, a patient's health-care provider needs to take additional steps to unclog or replace the PICC. The Biomimetic coating cannot guarantee continuous troublefree performance in all patients, but was developed to help the PICC last longer for most patients than traditional uncoated PICCs.

The Zeus catheter is easily identifiable by its purple securement hub with the Zeus name printed on the hub.



## How to care for your PICC

There are several steps that you may need to do to care for your PICC.

- Clean the insertion site and apply a clean dressing;
- Flush the catheter;
- Change the injection cap;
- Be able to detect problems and know what to do when they occur.

### **A. Dressing Change**

You will need to clean the insertion site and apply a clean dressing regularly, as ordered by your doctor. The frequency will depend on the dressing, your general health, the fluid infused into the catheter, and the condition of your skin. The doctor's orders may also change for any of

these reasons.

The doctor or nurse will tell you how often to change the dressing (likely at least weekly). Your doctor or nurse will also select the proper supplies for your routine care.

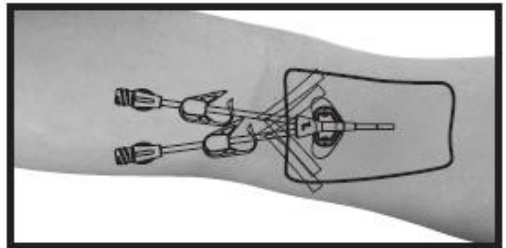
The “Site Care” procedure outlined here is only for your reference. You will receive instructions from your doctor or nurse on all procedures and you should not attempt any procedure alone until you feel confident that you can carry out all the steps. Ask your doctor or nurse about any steps or supplies that you are unsure of.

**Supplies to have available:**

- \_\_\_ Sterile gloves
- \_\_\_ Antiseptic solution
- \_\_\_ Sterile cover dressing (transparent or gauze)
- \_\_\_ Sterile 2 in. x 2 in. gauze dressings
- \_\_\_ Tape strips
- \_\_\_ Securement device (if needed)

1. Clean the work surface by wiping with a paper towel that has been moistened with alcohol. Wipe dry or allow to air-dry. Then place supplies on the cleaned, dry surface.
2. **Wash your hands thoroughly using warm, soapy water.** Thoroughly rinse and dry using a clean cloth towel or fresh paper towels.
3. Carefully open the dressing kit, or unwrap supplies, without touching the inside surfaces of the kits or wrappers.
4. Carefully remove the old dressing, pulling away from the catheter hub and toward the insertion site. Remove the tape or dressing carefully to avoid irritating your skin or pulling on the catheter.
5. **Wash your hands again.**
6. Carefully observe the catheter insertion site and the skin around it. Look for redness or drainage. Measure the external catheter length to ensure it has not gotten longer or shorter. **If you notice redness or drainage at the insertion site, have a fever or notice the external catheter length is longer or shorter, finish the dressing change and then call your doctor or nurse.**

7. Put on the pair of sterile gloves according to the procedure explained to you. After you have the gloves on and adjusted, do not touch anything other than the sterile supplies you will be using to clean the insertion site.
8. Carefully clean the catheter insertion site with antiseptic solution.
9. If your health care provider recommends Chloraprep, pinch the wings on the applicator to break the ampule and release the antiseptic. **Do not touch the sponge.** Wet the sponge by repeatedly pressing and releasing the sponge against the treatment area until liquid is visible on the skin.
10. Clean using continuous back and forth strokes for about 30 seconds to thoroughly wet the treatment area with antiseptic. Allow the area to dry for about 30 seconds. Do not blow or wipe away.
11. Some facilities place a securement device at this point. Check with your nurse or doctor to see if this applies to your PICC.
12. Fold a 2 in. x 2 in. gauze in half and place it under the catheter hub for padding (if needed), and apply tape strips.
13. Ensure the catheter is not kinked or pinched. Apply the cover dressing centering it over the insertion site, following the directions in the package as well as instructions from your doctor or nurse.
14. Secure the catheter to the dressing or arm with tape. This will prevent pulling of the catheter at the insertion site and decrease irritation. To help prevent possible catheter occlusion, do not coil the catheter.
15. Always secure the catheter in such a way that you can easily see the cap end. Your doctor or nurse will help you select the best method to secure the catheter. Your type of clothing and activities will need to be considered in this procedure. You should periodically look at the capped end to be sure it is intact.



## **B. Flushing the PICC**

The PICC is flushed with saline or heparinized saline to help clear the PICC after receiving medications or having blood withdrawn for lab tests. Your doctor or nurse will tell you when you need to flush and with what solution. If you only use the catheter for periodic treatments, you will need to flush the catheter once a day.

1. Flush the catheter after every use, or at least daily when not in use. Use a 10 ml or larger syringe.
2. Flush the catheter with \_\_\_\_ml of saline or heparinized saline (as recommended by your doctor or nurse), using a “pulse” or “stop/start” technique.
  - \* If unusual resistance occurs when flushing, stop immediately. Further flushing could result in catheter rupture or possible embolization. Consult your doctor or nurse for further instructions.

**Note:** Periods of increased physical activity may require more frequent flushing of your catheter. Consult your nurse or doctor for instructions.

There are prefilled saline flush syringes available, or your doctor or nurse may show you how to draw up saline from a vial into a syringe. **Do not use a syringe smaller than 10 ml for flushing. Do not flush against resistance.**

### **Supplies to have available:**

- Antiseptic wipe.
- A 10 ml syringe filled with saline, and prepared for use (your nurse or doctor will tell you how much saline to use).

### **The steps in the procedure are:**

1. Wash your hands thoroughly.
2. Collect your supplies in a convenient place.
3. Using friction, clean the cap with an antiseptic wipe. Allow the cap to air-dry, be sure not to touch the cap during this time. Do not blow on

the area or allow the clean cap to dangle since this increases the chance of contamination of the area with bacteria.

4. If you are using a needleless adapter or safety needle follow the instructions of your nurse or doctor to properly access the injection cap. Ensure the catheter legs are clamped before removing cap.
5. Using a 10 ml syringe, ensure the catheter leg is unclamped, then inject the saline into the catheter. As you inject the last 0.5 ml of normal saline, clamp the extension leg, then withdraw the syringe from the cap.
6. Remove the syringe from the injection cap. Discard.
  - **Caution:** When handling the catheter, use aseptic techniques.
  - **Caution:** Zeus catheters are designed for use with needleless injection caps or “direct-to-hub” connection technique. Always apply a sterile end cap on the catheter hub to prevent contamination when not in use.
  - **Warning:** Do not use alcohol to lock, soak or de clot this polyurethane PICC because alcohol is known to degrade polyurethane catheters over time with repeated and prolonged exposure.

### ***C. Changing the Injection Cap***

The catheter injection cap is the only part of the system that you will have to change. The injection cap is used for access and therefore needs to be changed regularly. The frequency will depend on how often you use your catheter. Your doctor or nurse will recommend an antiseptic solution and tell you how often you need to change your catheter injection cap.

#### **Supplies to have available:**

- 1 - Sterile injection cap
- 1 – Antiseptic solution
- 1 - Syringe
- Saline

#### **The steps to change the injection cap are:**

1. Wash your hands thoroughly.
2. Open the package of the new injection cap and prepare according to

the instructions provided. Be sure the cap does not touch the outer surface of the package.

**Note:** Prefill the injection cap with saline. Your doctor or nurse will teach you this part of the procedure.

3. Clamp the extension leg, then unscrew the old injection cap and discard, holding the catheter adapter below the level of your heart. (The fluid level in the catheter may drop partway into the catheter if the connector is held above the level of your heart).
4. Using antiseptic solution, clean around the hub where the injection cap connects to the catheter. Be careful not to touch the inside of the catheter. Allow to air-dry.
5. Pick up the new prefilled injection cap only by the top. Attach the new injection cap by firmly screwing it onto the catheter hub.
6. Repeat steps 3-5 for additional injection caps.

**Additional comments or changes recommended by your nurse or doctor.**


***D. How to detect and respond to problems with your PICC***

Don't expect problems but be prepared if they should occur. However, even

if you do not suspect a problem, you should report any changes in your catheter site, or any new discomfort, to your health-care provider. The following is a list of potential problems with specific information about each:

**PROBLEM: Infection**

**SIGNALS:** You may have a fever with a temperature over 100°F, possibly chills, or notice tenderness, swelling, or oozing at the insertion site. You may note a foul odor, feel pain or heat from the insertion site.

**WHAT TO DO:** Call your doctor or nurse.

**HOW TO AVOID IT:** Follow all instructions to avoid contaminating the catheter. Wash hands before beginning any procedure. Wear a mask if you have a cold or a cough. Avoid people who are ill.

**PROBLEM: Phlebitis**

**SIGNALS:** You may have redness, tenderness or pain, increased skin temperature, swelling, or the vein may feel hard. Some patients experience an increased redness around the insertion site about two weeks after catheter insertion. This can be a normal part of the healing process. The redness of normal healing goes away in 24-48 hours, it should not be accompanied by pain. Your doctor or nurse may suggest that you apply a warm compress several times daily until the redness is gone.

**WHAT TO DO:** Call your doctor or nurse.

**HOW TO AVOID IT:** Avoid strenuous use of the arm your catheter is in. Check your dressing regularly to make sure the catheter remains secure. Change the dressing every seven days as instructed by your doctor or nurse, or if it becomes soiled or loosened.

**PROBLEM: Breakage or separation of the catheter, extension leg, or catheter hub**

**SIGNALS:** There may be leaking of fluid when you flush the catheter. You may be able to see the break or the separation of the catheter above the junction, a broken extension leg, or separation of the catheter hub from the extension leg.

**WHAT TO DO:** If the catheter body breaks, bend the catheter back on itself and tape securely. If there is not enough catheter left to bend back on itself, carefully pull 1-2 inches of the catheter out from the site, then bend it back on itself and tape securely to your arm. Call your doctor or nurse. If the catheter breaks on the extension leg, bend the extension leg on itself and tape securely, call your doctor or nurse as this may be repairable.

**HOW TO AVOID IT:** Do not over-twist when changing the injection cap. Do not use a syringe smaller than 10 ml for flushing. Do not flush against resistance. Never have scissors or sharp objects near the catheter.

**PROBLEM: Disconnected Injection Cap**

**SIGNALS:** The injection cap will be missing.

**WHAT TO DO:** If you don't have a clean injection cap, bend the catheter back on itself and secure with a rubber band or tape, otherwise clean the catheter adapter connection and replace with a clean injection cap. Don't use the same injection cap. See changing injection cap instructions. Remove the tape or rubber band. Call your doctor or nurse.

**HOW TO AVOID IT:** Secure injection cap when replacing. Check the injection cap after each use and periodically each day, to ensure it remains tight and secure.

**PROBLEM: Loose Injection Cap**

**SIGNALS:** The injection cap will be loose and easily able to turn.

**WHAT TO DO:** Tighten the injection cap.

**HOW TO AVOID IT:** Check the injection cap after each use and periodically each day to ensure it remains tight and secure.

**PROBLEM: Occluded (Blocked) Catheter**

**SIGNALS:** Unable to flush the catheter using normal pressure.

**WHAT TO DO: DO NOT USE EXTRA PRESSURE.**

Call your doctor or nurse immediately. Your doctor or nurse will need to clear the catheter.

**HOW TO AVOID IT:** Flush on a regular schedule, after every procedure, or when blood has backed up into the catheter.

\* Periods of physical activity may require more frequent flushing of your PICC. Consult your doctor or nurse for instructions.

**PROBLEM: Difficulty Drawing Blood**

**SIGNALS:** You may be able to flush the catheter easily but will not be able to withdraw blood.

**WHAT TO DO:** Call your doctor or nurse.

**HOW TO AVOID IT:** This is typically caused by the body's attempt to wall off a foreign object by creating a fibrin sleeve around the catheter. You may not be able to fully avoid it.

**PROBLEM: Air in the Catheter caused by Catheter Damage**

**SIGNALS:** You may see air in the catheter or hear air enter the catheter.

This may occur because of breakage or dislodgment of the connections on the PICC. *If enough air has entered the catheter you may experience symptoms of shortness of breath, chest pain or light-headedness.*

**WHAT TO DO:** IF YOU FEEL SHORTNESS OF BREATH OR CHEST PAINS, CALL 911. THIS IS A MEDICAL EMERGENCY. Lie down on your left side or lie down with your feet well above your chest. If you are not experiencing any symptoms or are able to attend to the catheter, immediately bend the catheter back on itself, between the break and the skin insertion site, and secure it with a rubber band or tape. If there is not enough catheter left to bend it back on itself, carefully pull 1-2 inches of the catheter out from the site, then bend it back on itself and tape securely to your arm. Tape the remaining catheter securely to your arm. Consult your doctor or nurse to have the catheter fixed or removed as soon as possible.

**HOW TO AVOID IT:** Do not use sharp objects near the catheter. Do not leave catheter dangling from insertion site. Make sure all catheter connections are tight and secure.

**PROBLEM: Swelling of Neck & Arm on side of Catheter Insertion (Central Vein Thrombosis)**

**SIGNALS:** You may notice swelling of your hand, arm, shoulder or neck on the side of the catheter insertion.

**WHAT TO DO:** Call your doctor or nurse immediately. He or she will need to see you as soon as possible.

**HOW TO AVOID IT:** This happens to a certain number of people. Speak with your doctor or nurse for further instructions

**PROBLEM: Swelling at Exit Site**

**SIGNALS:** You will notice a lump increasing in size over the insertion site and occurring shortly after the insertion procedure.

**WHAT TO DO:** Apply gentle pressure over the dressing for a few minutes. Put ice in a plastic bag and apply over the dressing. Be sure not to get the dressing wet. Call your doctor or nurse if the swelling continues.

**HOW TO AVOID IT:** Follow instructions of your doctor or nurse about any restrictions of vigorous activities immediately after insertion.

# Frequently asked questions

## How will I know that everything is okay?

When you look at the catheter and insertion site, and you don't see anything unusual, be confident there are no problems. Some patients experience an increased redness around the insertion site about two weeks after catheter insertion. This can be a normal part of the healing process. The redness of normal healing goes away in 24-48 hours, it should not be accompanied by pain or fever. Your doctor or nurse may suggest that you apply a warm compress several times daily until the redness is gone. There should not be any drainage around the catheter. You will also know that everything is okay if you can flush your catheter freely.

During the time you have the catheter, your doctor or nurse may have you take your temperature every day and may ask that you make other periodic observations. This will be another way of making sure everything is okay.

## How will I know if something is wrong?

If you experience problems with the flushing procedure, you may have a clotting problem which requires immediate attention by your doctor or nurse.

A low-grade temperature and a feeling of general fatigue/weakness that lasts for more than 24 hours may mean the beginning of an infection. If you have a fever with a temperature higher than 100° F, call your doctor or nurse immediately. Contact your doctor or nurse as soon as you suspect that something is wrong.

## Can I bathe?

You should ask your doctor or nurse this question. The answer will depend on your general health and risk of infection. It will also depend on how long you have had the catheter in place. The doctor or nurse may allow you to bathe as long as you do not get the catheter dressing wet or damp.

## Does the insertion site always need a bandage?

The insertion site should always have a dressing or bandage on it. The type you use will depend on the recommendation by your doctor and what works best for you. Change the dressing every seven days and as needed if the dressing is loose, soiled or damp, or as directed by your doctor or nurse.

## What do I do if I get a cold or cough?

If you have a cold or cough, your doctor or nurse may tell you to wear a mask when you are caring for the catheter, especially during the cap change and dressing change procedures.

## If I forget to flush on time, what should I do?

You should flush the catheter as soon as you remember. Never force fluid into the catheter, especially if it has been a while since you flushed. If you experience difficulty flushing, contact your doctor or nurse immediately.

## What happens if I can't flush the catheter?

If you have difficulty flushing the catheter, check your catheter to be sure there are no kinks or other obstructions in the catheter.

**DO NOT** try to flush against resistance!

If the catheter is not kinked or obstructed and you still cannot flush using the small amount of pressure that you have been applying, contact your doctor or nurse immediately. You may have a clot in the catheter. Never attempt to do anything with the catheter that your doctor or nurse did not show you how to do. You may dislodge a clot into the bloodstream or you may damage the catheter.

## What happens to the PICC if it is damaged?

After you have taken the precaution of bending the catheter on itself and securing it with a rubber band or tape, you will need to have it repaired or replaced. Special equipment is necessary to repair or replace the catheter. If there is not enough catheter left to bend it back on itself, carefully pull out 1-2 inches of the catheter from the insertion site. Tape the

remaining catheter securely to your arm.

### **If I break the needle in the end cap, what should I do?**

Remove the end cap and broken needle. Apply a new end cap as previously instructed and complete the flushing procedure. If unable to remove the broken needle, carefully pull out 1-2 inches of the catheter from the insertion site, bend the catheter back on itself and tape down securely. Call your doctor or nurse.

### **If I run out of supplies, what should I do?**

Call the hospital, company, or pharmacy that is supplying you with what you need. If you run out of supplies and can't reach your supplier, call your nurse, doctor or local pharmacist for assistance. You should always have extra supplies available so you won't run out.

### **If blood backs up into the catheter, is something wrong?**

Blood in the cap and catheter won't hurt you but it may increase the growth of bacteria and increase the risk of clotting or infections. Blood usually backs up into the catheter only when there is increased internal pressure created by some form of physical activity or bending over. If you do notice blood, you should flush the catheter as soon as possible.

### **What happens if the catheter won't come out when I don't need it anymore?**

The catheter is removed by pulling it out. The catheter is made of a material designed to slip in and out of skin and blood vessels. The person removing the catheter is specially trained to handle the procedure and the rare problems that may occur.

### **What happens if the catheter breaks?**

The part that is most likely to break is the end of the catheter that holds the end cap. If this should occur, immediately bend the catheter on itself between the break and the skin insertion site, securing it with a rubber band or tape. If there is not enough catheter left to bend it back on itself, carefully pull out 1-2 inches of the catheter from the site, then bend it back on itself and tape securely to your arm. Tape the remaining catheter securely to your arm. **Call your doctor or nurse.**

## **What happens if the catheter accidentally comes out?**

Since the catheter is anchored to your skin, it is unlikely that it will come out unless you pull on it. After time, the catheter may stretch a bit and seem like it has slipped out. If you suspect the catheter is slipping out, call your doctor or nurse.

## **If I have a treatment, do I need to flush the catheter?**

The final step in any treatment done through the catheter is a flush of some type. If the catheter has been flushed following treatment, use that time as the last flush and schedule your next flush at the recommended interval. Be sure to check with your doctor or nurse, since the flushing procedure varies depending on what the catheter is used for and your level of activity.

## **Can I engage in sexual activity when I have the catheter?**

There is no prohibition against sexual activity because of the catheter. Some safety precautions are necessary before you begin any activity. The dressing at the insertion site should be secure and the catheter covered by the dressing and secured with tape at the hub so it is not hanging free. If you see blood in the catheter, flush it with 10 ml of saline. Do not hesitate to discuss this with your doctor or nurse.

## **What should I do if I become allergic to tape?**

There are other choices of hypoallergenic tapes available. It is important to be aware of any skin problems near the insertion site because the danger of infection increases if there is skin irritation.

## **Should I wear a medical alert type bracelet or have some other information available about my catheter?**

It would be a good idea to wear something to alert others that you have a peripherally inserted central venous catheter. If you were in an accident or became ill and couldn't give this information yourself, the bracelet could be lifesaving by informing emergency personnel that you have a catheter. There are commercial companies that have medical alert bracelets or you may want to ask for a hospital type plastic waterproof I.D. band as a temporary measure. Another option is the catheter card given to you by your nurse or doctor. Place the card in your wallet and carry it with you

always.

### Should someone else learn the procedures?

Most people are not able to change a PICC dressing by themselves. Having another person available who has been trained in all the necessary procedures is important. It is most important that someone knows how to perform the emergency procedures.

### I've heard that some chemicals can hurt the catheter. Is this true?

Some chemicals can damage the catheter. It is important not to use anything near the catheter unless you check with your doctor or nurse. Do not use acetone near the catheter, such as that found in nail polish remover or some tape removers, as this is especially harmful.

### How long can the catheter stay in place?

Your doctor is the best source for this answer. The catheter is designed to stay in place for long periods of time, but each situation is unique. The answer depends on what the catheter is used for, your general health, and the care and attention paid to the procedures. The better care you take of your catheter, the longer you may be without complications.

**Additional comments or changes recommended by your nurse or doctor.**


# Catheter information and supply list

Patient Name: \_\_\_\_\_ Date: \_\_\_\_\_

Baseline Right/Left Upper Arm Circumference was \_\_\_\_\_ cm.

Catheter model: \_\_\_\_\_

Product Code: \_\_\_\_\_ Lot No.: \_\_\_\_\_

Catheter French Size: \_\_\_\_\_ # of Lumens: \_\_\_\_\_ Length (cm): \_\_\_\_\_

PICC inserted via: Left Right, Basilic Cephalic Brachial Other Vein:

\_\_\_\_\_

Blood Return was Obtained/Not Obtained: \_\_\_\_\_

\_\_\_\_\_ cm. of insertable catheter length exposed from insertion site.

Hospital: \_\_\_\_\_ Phone: \_\_\_\_\_

Doctor: \_\_\_\_\_ Phone: \_\_\_\_\_

Nurse: \_\_\_\_\_ Phone: \_\_\_\_\_

Supplier: \_\_\_\_\_ Phone: \_\_\_\_\_

**List of Supplies Needed:**

Dressing Supplies:

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Flushing Supplies:

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Catheter Care Schedule:

	SUN	MON	TUE	WED	THU	FRI	SAT
Site Care:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flushing:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cap Change:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Special Instructions: \_\_\_\_\_

**Acknowledgment**

(Cut out and place in patient medical record)

I, \_\_\_\_\_  
have received the patient guide – **Caring for your  
r4 Vascular PICC** from:  
\_\_\_\_\_  
(name of person providing patient guide).  
\_\_\_\_\_  
(signed) (date)  
\_\_\_\_\_  
(signed) (date)

An issued or revision date for these instructions is included for user's information. If two years have elapsed between this date and product use, the user should contact **r4 Vascular, Inc.** to see if additional product information is available.

Revised Date: November 2009



**r4 Vascular, Inc.**  
**7550 Meridian Circle N., Suite 150**  
**Maple Grove, MN 55369**  
**1-866-943-8090**  
**[www.r4vascular.com](http://www.r4vascular.com)**

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