



PERIPHERALLY INSERTED CENTRAL CATHETER (PICC)



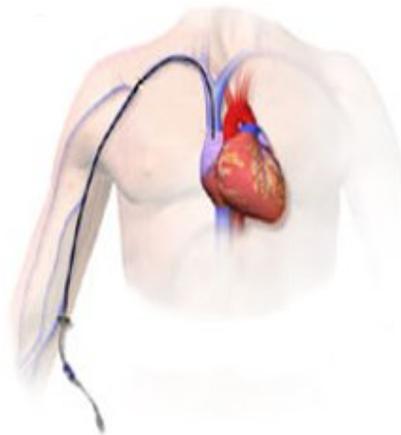
Escambia County, Florida - ALS/BLS Medical Protocol

This procedure (accessing PICC Lines) can only be performed by those paramedics that have received prior training and authorization from the Escambia County Public Safety Medical Director.

The **Peripherally Inserted Central Catheter (PICC)** is a long catheter that extends from an arm vein (such as the cephalic vein, basilic vein or brachial vein) into the largest vein (superior vena cava) near the heart and typically provides central IV access for several weeks/months.

PICC lines are extremely flexible, affording the patient nearly unlimited use of the extremity. PICC lines are normally secured by a suture to the skin with a dressing over the site. They usually have one or two lumens (ports).

Patients have PICC lines for many reasons, the most common being for long-term medication administration. Examples are chemotherapy, antibiotics or blood transfusions.



PICC lines are not to be confused with central line catheters that are larger gauge, and are designed to be placed via a large, more central vein such as the jugular or the femoral veins. Examples of central line catheters include HICKMAN, BROVIAC and GROSHONG catheters. Dialysis catheters are another example of central line catheters. Central line catheters may have one lumen, but normally have either 2 or 3 lumens (double or triple lumen).

An increasing number of patients are being sent home with PICC lines still in place.



Approved: 10/01/2011
Version: 3.1

Page 1 of 9

Approved by:


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Paramedics will not access central line catheters or dialysis catheters, whether located in an extremity, neck, groin or chest areas.

On rare occasion you may see a PICC line located in the chest area. Do not use a chest area PICC line for IV access.

If uncertain what catheter type the patient has, ask them or a family member before attempting catheter use.

Paramedic's may access PICC lines, if functioning correctly and located in an extremity, to administer medications and/or fluids in the following emergent situations:

Difficulty and/or delayed access to peripheral veins with any of the following:

- Critical patients in immediate need of IV fluids and medication
- Cardiopulmonary arrest
- Respiratory arrest
- Acute altered mental status
- Hypovolemic shock
- Unstable vital signs
- STEMI Alert
- Stroke Alert

Do not delay transport of a critically ill or injured patient to access a PICC line on-scene.

Due to the length of the catheter and the internal lumen diameter, PICC lines should not routinely be considered 1st line for rapid fluid resuscitation. In most



Approved: 10/01/2011
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Page 2 of 9

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cases, fluids may be infused at a fairly rapid rate without harm to the catheter. Using a pressure bag should not harm the catheter.

PICC lines do not require flushing with heparin after each use. Some hospitals and/or organizations require heparin flush in their protocols. **Never assume a PICC line was flushed with normal saline after its last use.** Flushing the line after each use helps to prevent formation of blood clots either in the catheter or at its tip in the vein.

Inadvertently flushing a line rather than aspirating prior to use might result in bolusing the patient with heparin that may be in the catheter line. This can lead to possible serious consequences for the patient.

Most **PICC lines** have a needleless cap on the end. Many do not have a clamp above the connector cap. (See pictures below.)

Non-needleless caps will have a clamp above the connector cap. If you need to recap a non-needleless line the patient may have spare sterile caps or use a IV PRN adaptor.

On Multi-lumen catheters the blue or clear color typically identifies venous access.

Catheter Complications:

Most catheters are constructed of material that is pliable and fairly resistant to breakage, tearing, kinking, etc. However, this does occur.

Always:

- Inspect the catheter for tears or breaks.
- Check for visible kinks.
- Check for bleeding around the site. Bleeding may be a sign of catheter dislodgement.
- When moving a patient, there is a risk of catheter displacement. Ensure there is adequate tubing length and that the catheter itself is not caught



Approved: 10/01/2011
Version: 3.1

Page 3 of 9

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Charles Neal, D.O. Medical Director



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Escambia County, Florida - ALS/BLS Medical Protocol

on side rails or other objects prior to moving the patient. Extra tape and/or dressing material should cover the area of IV tubing before the PICC Line.

If a catheter is accidentally removed, place firm pressure on the site for at least 10 minutes with several 4 x 4s and/or a trauma dressing to control bleeding.

Other complications that may occur are:

- **Infection** -due to the location of the catheter, strict adherence to aseptic technique is crucial.
- **Air embolism** –catheter provides a direct line into the circulation, therefore, the introduction of air into these devices can be hazardous.
- **Thrombosis** -a blood clot within the vascular system can be caused by improper handling and maintenance of the catheter; dislodging a clot can cause a pulmonary embolus or vascular damage.

Supplies needed to Access:

- 3-Isopropyl alcohol wipes. (May use povidone-iodine swabs/pads if available.)
- IV set up with 1000 ml Normal Saline.
- 10 cc syringe for aspiration.
- 10 cc syringe filled with sterile 0.9% sodium chloride (normal saline) – flush.
- Gloves
- Sharps container



Approved: 10/01/2011
Version: 3.1

Page 4 of 9

Approved by:


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Escambia County, Florida - ALS/BLS Medical Protocol

Accessing a PICC line:

Prepare an IV set up with 1000 ml Normal Saline which will be attached to the cap at the distal end of the catheter.

NOTE: All medications will be administered through the IV ports on the IV tubing.

If there is a cap with a needleless port on the distal end of the catheter, perform the following procedure:

- Question/reassure patient about any concerns over using their catheter. Explain procedure to patient.
- Don gloves, unsterile ok. Use aseptic technique and observe universal precautions throughout procedure.
- Aggressively cleanse the port, 3 times, with alcohol pads. Use at least 3 alcohol pads. (May use povidone-iodine swabs/pads if available.)
- Attach a 10 ml syringe (without saline) to the port and attempt to aspirate about 10 ml. Blood/fluid should aspirate freely. This will help aspirate any small clots that may have formed at the distal tip of the catheter. Also, if the catheter was flushed with any medications, such as heparin or normal saline, they will be removed. If you cannot aspirate, remove the syringe and **do not** use the catheter for access.
- After aspiration, flush the catheter gently with 10 ml of sterile normal saline.
- After the 10 ml of normal saline flush, if flushing freely, remove the 10 ml syringe and attach the end of the IV tubing and begin IV infusion of Normal Saline. Adjust rate according to condition and needs of the patient. Secure the IV tubing to the patient (tape or kerlex) below the PICC connector for added safety.

If the cap on the distal end of the catheter has the needle-type port or cap, perform the following procedure:

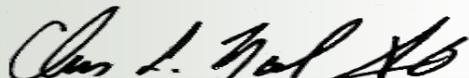
- Question/reassure patient about any concerns over using their catheter. Explain procedure to patient.



Approved: 10/01/2011
Version: 3.1

Page 5 of 9

Approved by:


Charles Neal, D.O. Medical Director



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Escambia County, Florida - ALS/BLS Medical Protocol

- Don gloves, unsterile ok. Use aseptic technique and observe universal precautions throughout procedure.
- Aggressively cleanse the port, 3 times, with alcohol pads. Use at least 3 alcohol pads. (May use povidone-iodine swabs/pads if available.)
- Clamp the catheter tubing (using only the existing clamp on the catheter), and then remove the cap.
- Attach a 10 ml syringe (without saline) to the port, unclamp catheter tubing and attempt to aspirate about 10 ml. Blood/fluid should aspirate freely. This will help aspirate any small clots that may have formed at the distal tip of the catheter. Also, if the catheter was flushed with any medications, such as heparin or normal saline, they will be removed. If you cannot aspirate, remove the syringe and **do not** use the catheter for access.
- After aspiration, clamp catheter tubing and change syringes to the Normal Saline flush. Unclamp catheter tubing and flush the catheter gently with 10 ml of sterile normal saline.
- After the 10 ml of normal saline flush, if flushing freely, clamp catheter tubing and remove the 10 ml syringe. Attach the end of the IV tubing, unclamp catheter tubing, and begin IV infusion of Normal Saline. Adjust rate according to condition and needs of the patient. Secure the IV tubing to the patient (tape or kerlex) below the PICC connector for added safety.



Approved: 10/01/2011
Version: 3.1

Page 6 of 9

Approved by:

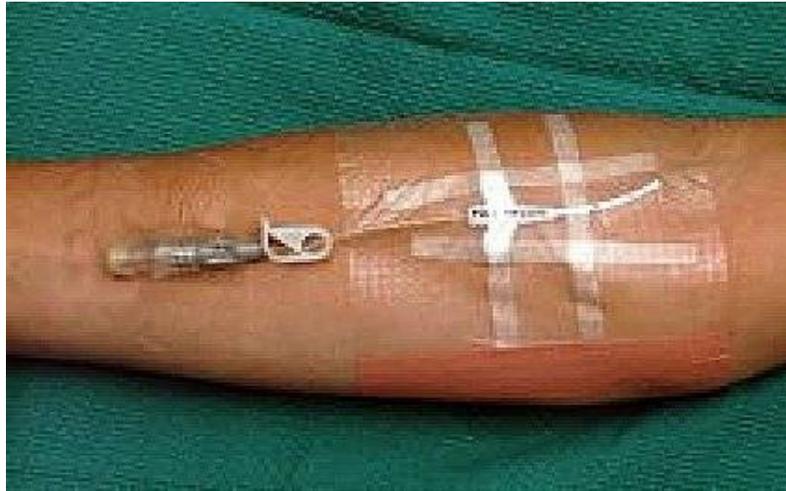

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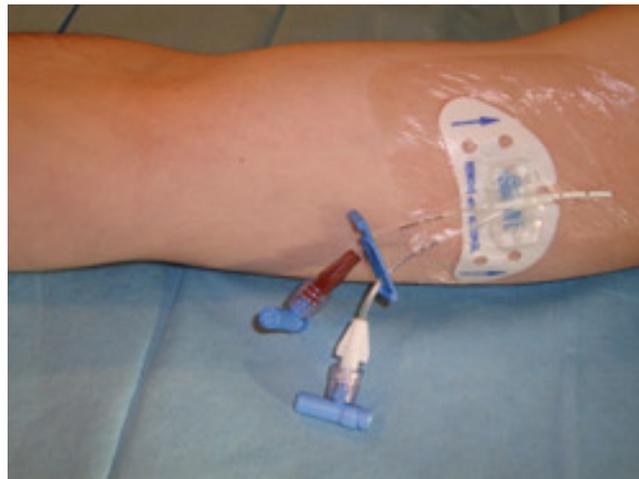
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Single lumen PICC line with needle-type port/cap and clamp



Double lumen PICC line



Approved: 10/01/2011
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Page 7 of 9

Approved by:


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Larger central line catheter with needleless ports, arm placement.



Central line catheter chest placement



Approved: 10/01/2011
Version: 3.1

Page 8 of 9

Approved by:

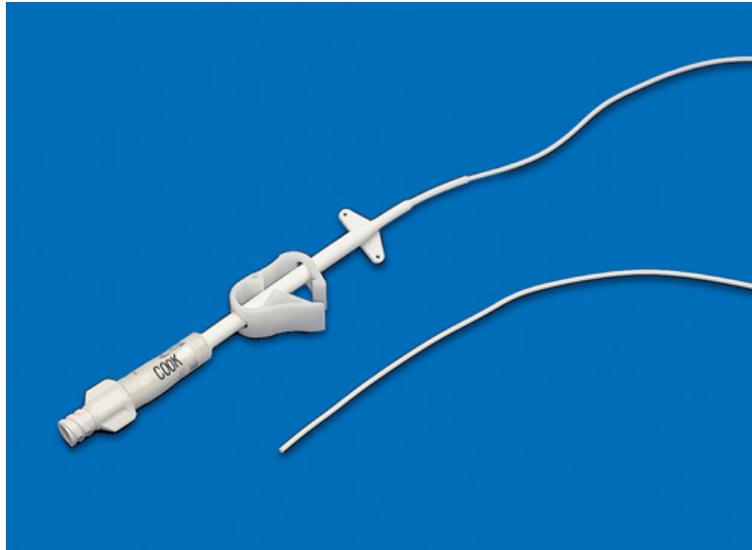

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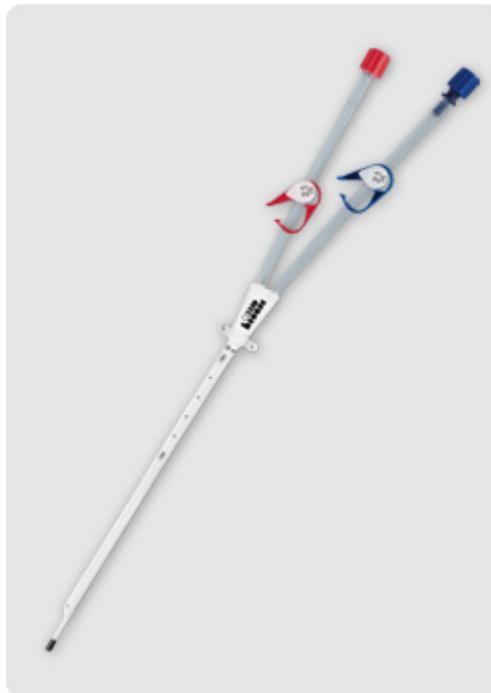
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Single lumen PICC line catheter with clamp



Dialysis type central line catheter



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Version: 3.1

Page 9 of 9

Approved by:


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