

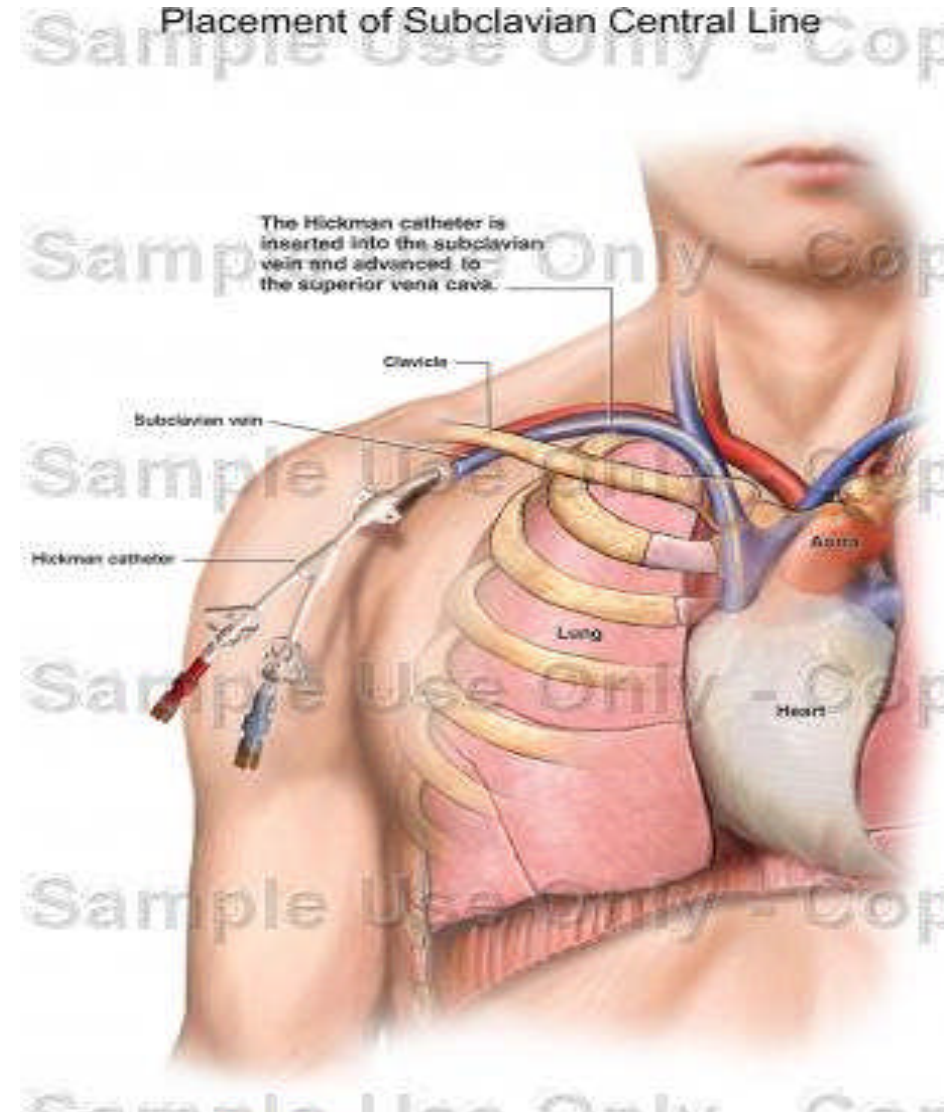
Central Line Care and Management



What is a Central Line/ CVAD? (central venous access device)

- A vascular infusion device that terminates at or close to the heart or in one of the great vessels
(aorta, pulmonary artery, superior vena cava, inferior vena cava, brachiocephalic veins, internal jugular veins, subclavian veins, external iliac veins, and common femoral veins)

Placement of Subclavian Central Line



Indications for Central Lines

- To administer intravenous medications and intravenous fluids
- To obtain blood specimens
- To administer total parenteral nutrition or chemotherapy
- To transfuse blood/blood products

Central Line Associated complications

- Arterial puncture
 - Hematoma
 - Pneumothorax
- Catheter malposition
 - Arrhythmias
 - Air embolism
 - Thrombosis
 - Infection
- Catheter occlusion

Locations and Insertion type

Locations:

- Subclavian vein
- Internal jugular vein
- Femoral vein

Types:

- Tunneled:
 - Groshong, Hickman, Broviac
- Non tunneled
 - Arrow triple lumen (very common)
- Midline
 - (for intermediate term therapies)

Types of central lines/ CVAD's

Triple lumen catheter

- Multi lumen catheter composed of 3 lumens.
- Each lumen has a pigtail of a different color
- Intended for short term use

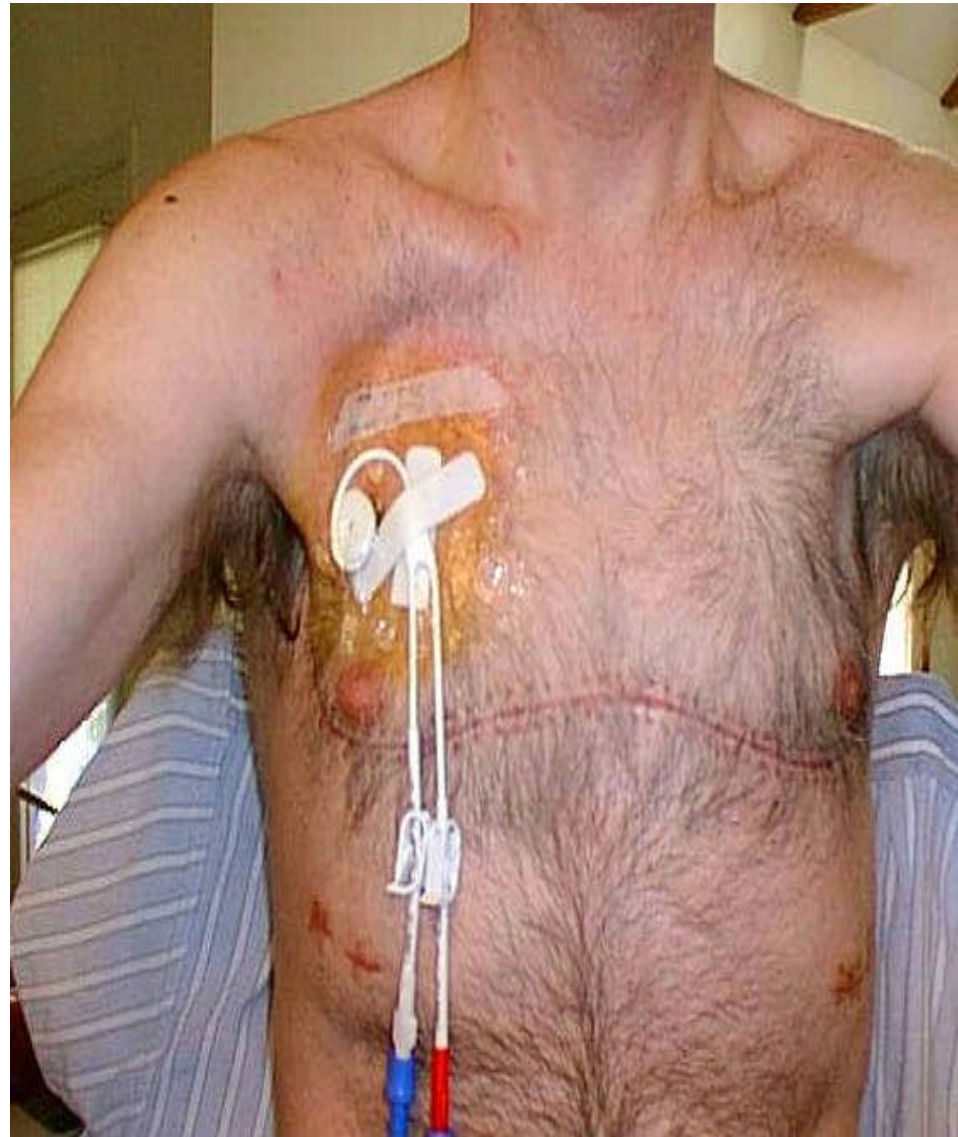


Types of central lines/ CVAD's

Double lumen

BE CAREFUL! Do not confuse with a double lumen catheter!

- May be inserted exclusively for dialysis (perm-cath, VAScath)



Types of central lines/ CVAD's

Single lumen catheter

Often seen when patients go home with indwelling central lines

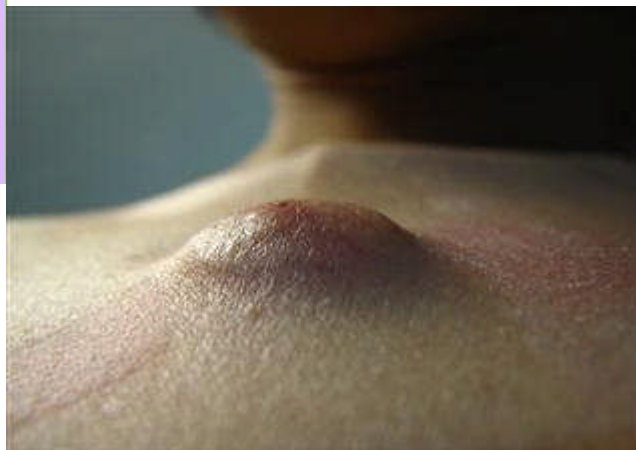
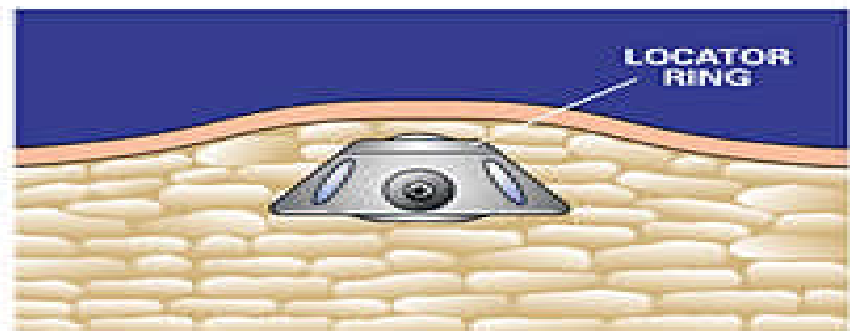


Types of central lines/ CVAD's

Mediport/ Infusaport

A surgically implanted device placed subcutaneously under the skin. The ports are not externally exposed, so they are cosmetically appealing and have a lower risk of infection

BE CAREFUL!
Distinguish against Pacemaker



Peripherally Inserted Central Catheter

Percutaneous, single or multi-lumen line inserted in the arm. (via the antecubital, basilic or cephalic or median cubital vein)

The tip of the PICC is placed in the superior vena cava at the entrance to the right atrium of the heart.

Duration: 1-12wks

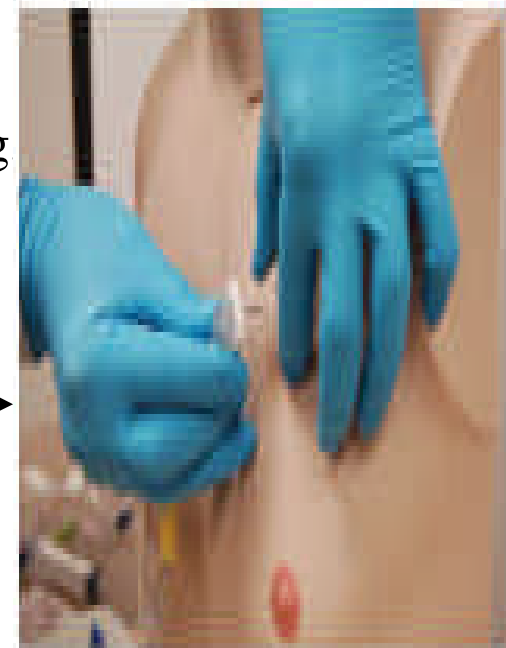
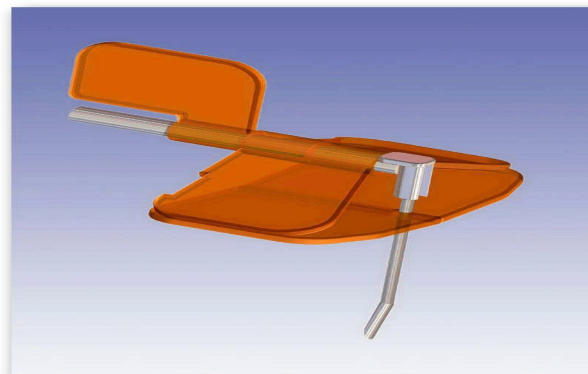


BE CAREFUL –distinguish from a Peripheral IV !

Infusaport/Mediport and PICC Lines

- Must be accessed by specially trained personnel
- DO NOT ACCESS or DEACCESS INFUSAPORTS OR PICC LINES UNLESS YOU HAVE ADDITIONAL PICC TRAINING – BEYOND THIS MODULE!!
- You may hang a piggyback to pre-established main lines
- Maintain strict aseptic technique always

*Infusaport: uses a Huber Needle for accessing so tubing will be connected to that.



Central Line Policies

- Sterile gloves, gowns, masks and caps must be worn for all central line insertions.
- All fluids/medication infused via central lines must be on a pump.
- IV tubing is connected with a threaded lock cannula (needleless system).



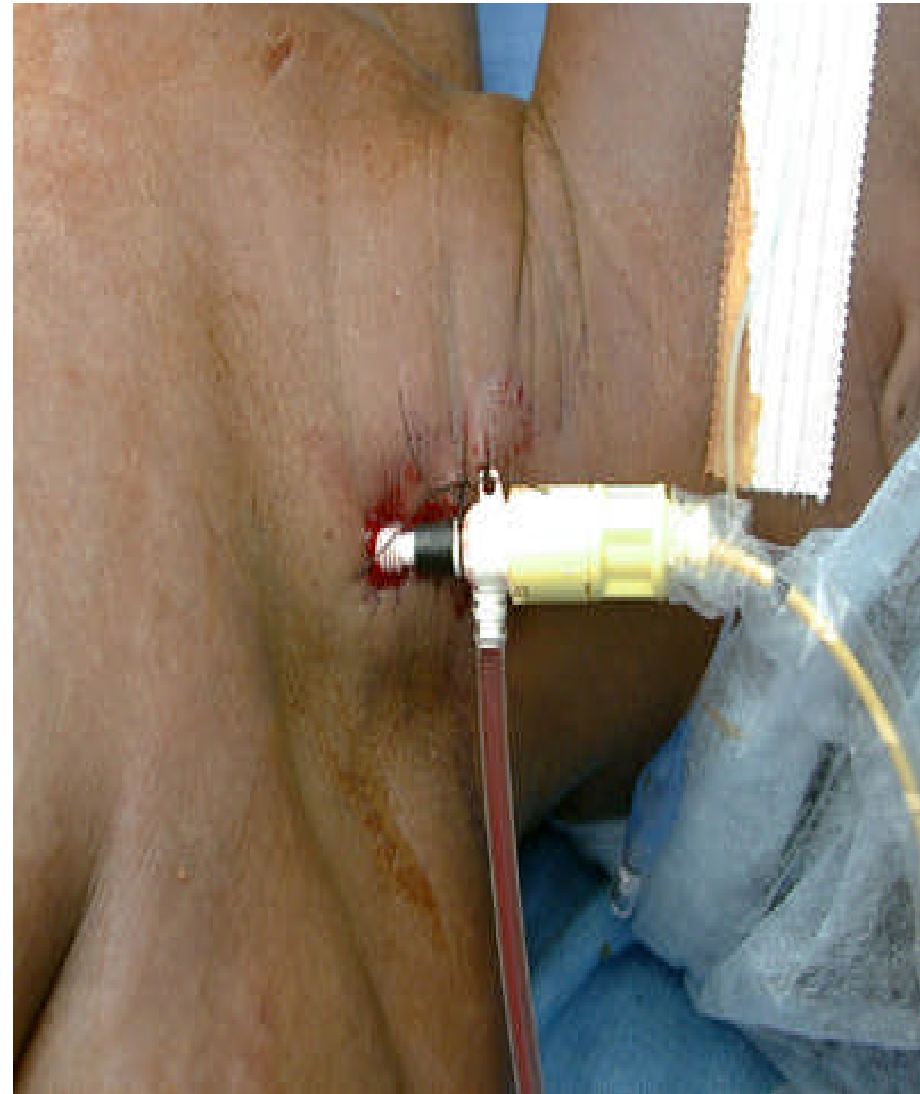
Central Line Policies

- All medication must be piggy backed through a main line.
- Central line placement **must be confirmed and documented** *before* the line is accessed.



Central Line Policies

- Introducers are not to be used outside of the ICU's!



Central Line Policies

- TPN and blood can be infused at the same time through CVCs that have staggered openings in each lumen or side-by-side lumens.
 - The double and triple CVC lumens are staggered.
 - Implanted ports and PICCs are side-by-side



Central Lines

- Insertion
- Accessing (may require order)
- Deaccessing (may require order)
- Drawing blood
- Dressing change with Clave (cap) change



Insertion

- Utilize both the Central Line Insertion Care Team Checklist and the CVC Insertion Note
- Both must be filled out and signed by person who performed the procedure and the RN who witnessed the time-out procedure.

CLABS prevention measures:

- The Central Line Insertion Care Team Checklist :
 - is not part of the medical record
 - Use it to ensure and document compliance with Infection Control guidelines (ie. sterile technique) and with Safety Practices (ie. the guidewire was removed).
- CVC insertion is to be observed by an RN who has received appropriate education to ensure that sterile technique, as indicated on the checklist, is followed.



Accessing Central Lines

- ID pt/ Explain procedure/ Prepare equipment/ clean injection site with alcohol
- With 10 ml saline syringe, aspirate for blood return
- Inject appropriate amount of saline/remove syringe applying positive pressure on plunger as syringe removed
- Connect IV infusion/ utilize infusion pump
- Remove gloves/ wash hands
- Document



Deaccessing Central Lines

- Done after accessing / infusing med
- All unused (capped) central line catheters (subclavian, jugular or femoral) are flushed once every 12 hours with 10ml sterile 0.9% sodium chloride, and documented on the MAR.
 - Note: only if ordered shall 1 ml heparin in a prefilled syringe (not to exceed 100 units/ml) be instilled after the saline flush.
- Inject appropriate amount of saline; remove syringe.
- Clamp tubing
- Document in MAR.

Note:

- Tunneled catheters Hickman / Broviac) require a flush every 12 hours if capped, with a 10 ml sterile prefilled 0.9 % sodium chloride syringe.
- If patient's therapy has ended or patient will be discharged, instill heparin 3 ml (not to exceed 100 units/ml) after the saline flush. Ensure documentation in the MAR.

Blood Draw

- ID pt/ Explain procedure/ Prepare equipment/clean injection site with alcohol
- Insert syringe into clamp
- Discard appropriate amount of blood
- Draw required blood specimens in the order of the draw, using vacutainer
- Invert tubes 8- 10 x & label tubes at bedside
- Flush line with 20 ml of saline**
- Send specimens to lab in biohazard bag with requisition slip
- Document

****Note:** only if ordered shall 1 ml heparin in a prefilled syringe (not to exceed 100 units/ml) be instilled after the saline flush.

Click here to watch a brief generic video on drawing blood from a central line

<http://vimeo.com/4757401>



Follow this Order of the Draw when drawing multiple tubes

1. Blood Culture Bottles*
2. Blue*
3. Red
4. Gold
5. Green
6. Pink
7. Lavender
8. Gray
9. Other



Note

- Do not draw blood cultures (unless specifically requested by order)
- Be mindful about drawing coagulation studies (blue tops) from the central line.
- Why?



Answer:

- Blood cultures should be drawn from peripheral site. You do not want blood from the line, unless you are trying to rule out line sepsis. You want a fresh specimen, not a specimen that's been dwelling in the central line
 - When you are drawing blood cultures from the line to rule out line sepsis, make sure to cleanse Clave port with Chloro-Prep applicator
- Blue tops are coagulation studies and if the central line is heparinized, this may produce false results



Clave port Change and Tubing Change



- Capped central lines
 - Clave port is changed once a week with dressing change.
 - Approved device is the MicroClave.
 - This device is cleaned prior to connection with IV tubing or a syringe with 2 alcohol prep pads – using friction and allowing to air dry!

IV Tubing connected to central lines. Change:

- for continuous infusion every 96 hours unless it is contaminated.
- for intermittent infusions, every 24 hours.
- Every 4 hours or with every unit of blood or blood products
- Every 12 hours with lipid based medications, Diprivan
- Every 24 hours with TPN and lipids alone
- Clave adapters are changed with tubing
- Click here to watch a brief generic video on drawing blood from a central line and performing a cap change:
<http://www.youtube.com/watch?v=dnjocVosQaQ>

Dressing Change

- Best practice recommendations are for site care and dressing changes every 7 days and prn.
 - If gauze is present under the dressing, dressing must be changed every 48 hours
- Use sterile technique
- Use central line dressing change kit
- Do not touch PICC or infusaport dressings!

Click here to watch a brief generic video on central line dressing change:

<http://www.youtube.com/watch?v=t9lDv0204XQ>



Writing your note

- Documentation findings
 - Visual inspection description
 - Palpated for tenderness
 - Febrile? – blood cultures done?
 - Drainage? – describe it; site/ blood culture done?
- Daily assessment of site
- Is the line patent?
- Presence or absence of blood return
- Accessing or deaccessing of line
- Document flush on Medication Administration Record

Return Demonstration

Return Demonstration will be done in orientation on:

- Accessing/ de-accessing a central line
- Drawing blood from a central line
- Central line dressing change with cap change



You have completed this module.

