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Central Venous Catheter (CVC) in the School Setting

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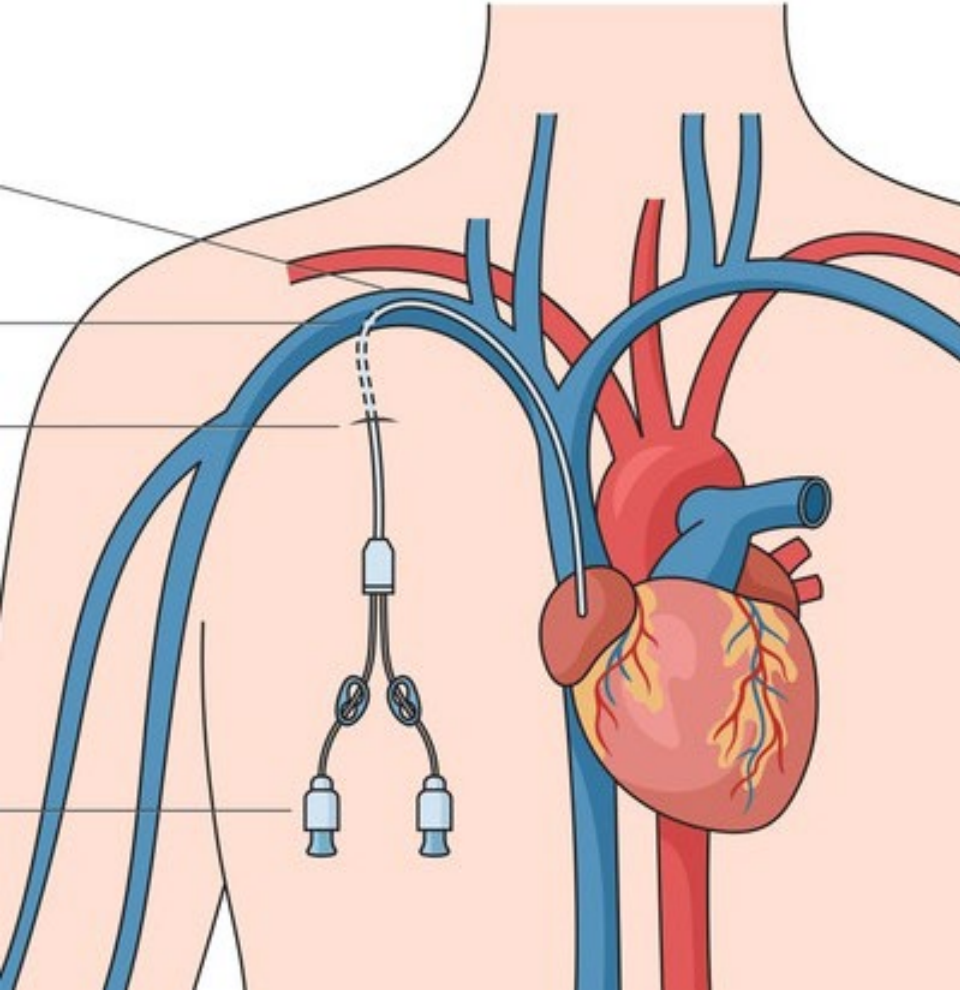


CVC's in the School Setting

- 1 What is a central venous catheter and why would one be needed
- 2 Types of central lines
- 3 Considerations for school, school kits, and daily checks
- 4 Emergencies in the school
- 5 CLABSI risk (central line-associated bloodstream infection)



Central venous catheter



What is a CVC?

- It's a long-term use IV
- Placed in the Superior Vena Cava to deliver medicine, blood and fluids to the heart, so it can be moved to the rest of the body quickly.
- It can also be used to draw blood
- Can be placed sedated or while awake.
- The CVC goes straight into the heart, so, infection prevention is key!

Reasons for a CVC



Long term access for medications, chemotherapy, hemodialysis



Highly irritating meds/fluids/TPN & lipids



Poor peripheral access



Common Types of CVC's

1

Hickman/
Broviac

2

Hemodialysis
Catheter
(HD)

3

Implanted
Port

4

Peripherally
Inserted
Central
Catheter
(PICC)



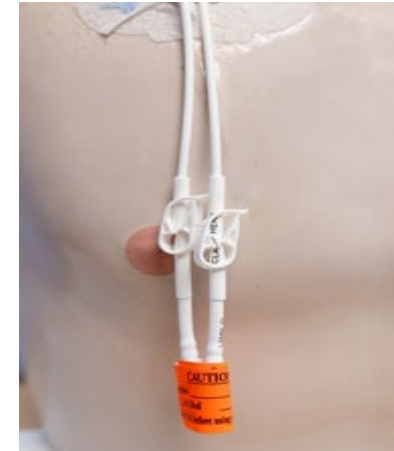
Hickman/Broviac

- Placed by surgery while sedated
- The difference is bore size, Broviac has a smaller gauge
- These CVC's have a fabric cuff-goal is to stay in for years-body creates scar tissue
- Can have 1, 2 or 3 lumens (separate lines in the same device)
- Need to vary clamping to not create weak spots and note the designated clamping areas



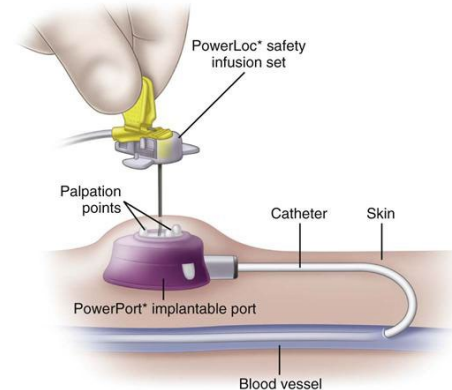
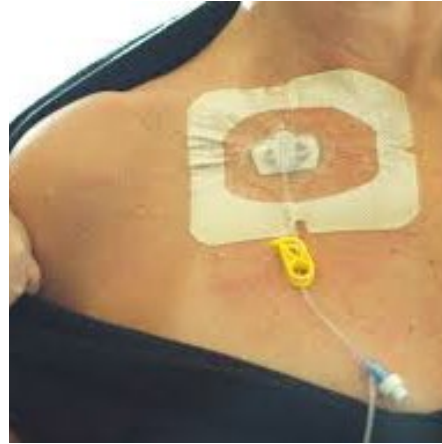
Hemodialysis (HD) Catheter

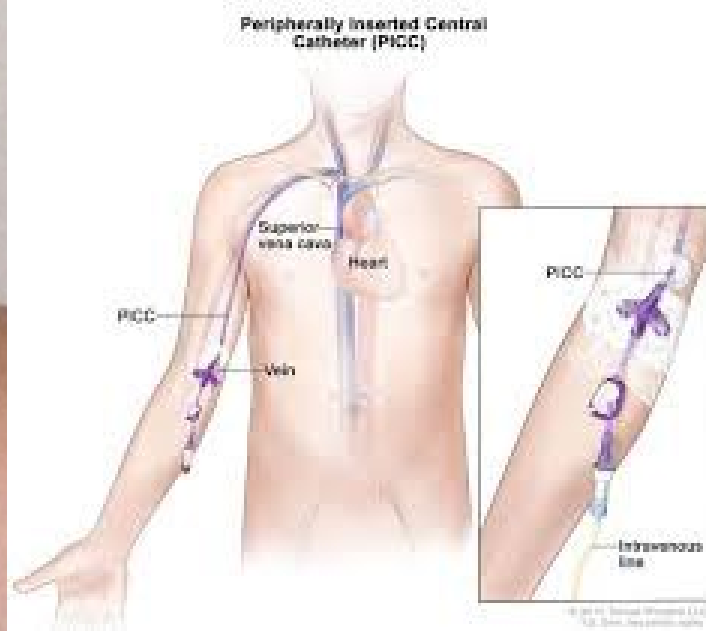
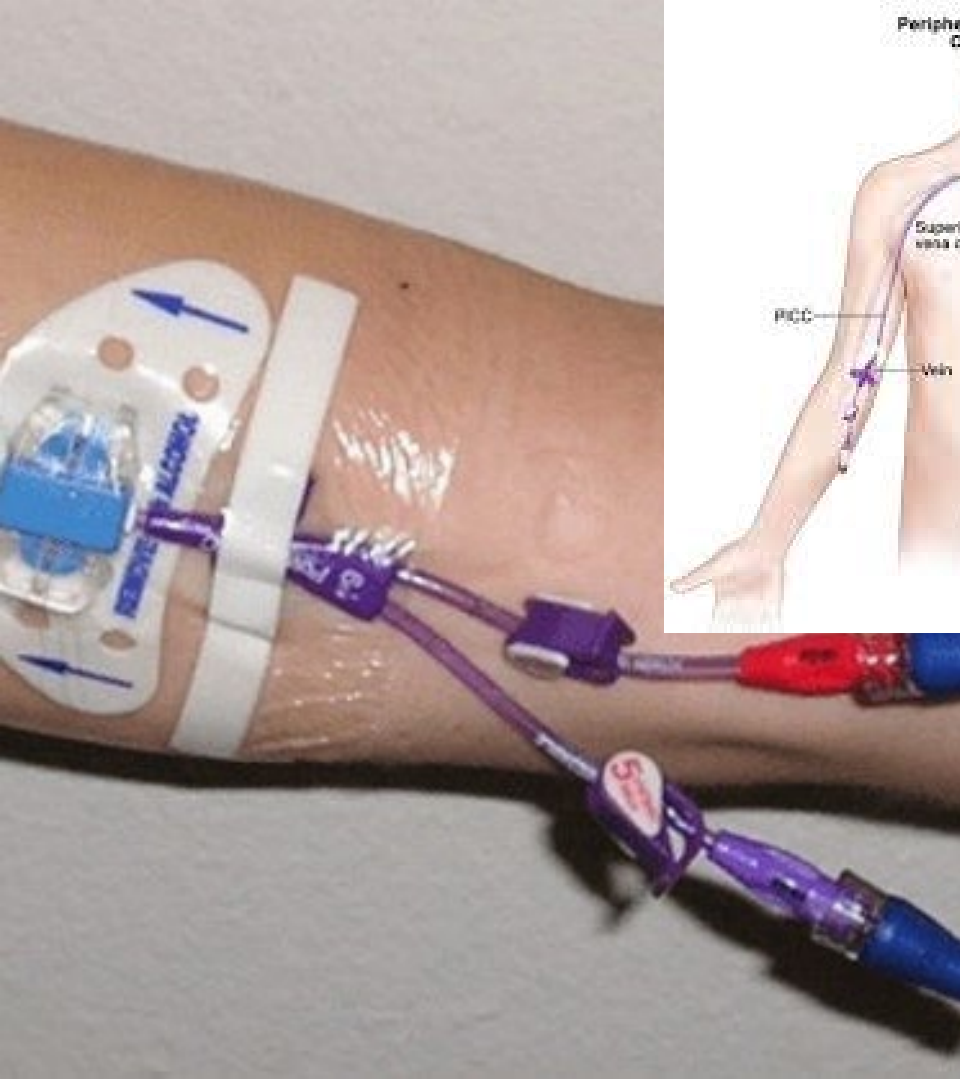
- Used for intermittent hemodialysis.
- Dual lumen and large bore to accommodate faster blood flow in and out of the body during dialysis treatment.
- Surgically placed under sedation.
- Tunneled under skin and then into the vein to help keep it secure for long term use.
- Orange sticker around caps- placed by dialysis personnel to clarify what is indwelling in the catheter.
- Pouch- soft wrap to protect lumens
- May see tego caps (yellow) or clear guard (red and blue)
- Example: A student may receive dialysis MWF for 2-4 hours.



Implanted port

- Minor surgical procedure
- Placed in chest, arm, or abdomen
- Single or double port
- When not in use = un-accessed
- May see sutures or steristrips if newly placed





PICC

- Peripherally inserted above the elbow
- Can be placed at the bedside with guided ultrasound, local and mild sedative
- Sutured in place or secured with device such as a STAT lock

Considerations for School

Why was it placed, what type of line, when was it placed, how long it will be in place, and any other special considerations?

Providers may have restrictions, however, “let kids be kids” and be aware they have a line. Kids with PICC lines should not be allowed to hang from monkey bars or lift over 10#s.

How far away from closest ED? Concern would be for quick intervention for potential line infection or septic shock. (Temp of 100.4 or higher or signs of site infection)

Staff should not do any routine cares including: dressing changes, cap changes, infusions, or flushes



School Nursing Considerations for Continuous Infusions

-Best practice would be a 1:1 nurse

- Due to hourly site checks for potential infiltration
- Does not matter the line, all can infiltrate

-Is this infusion potentially detrimental to others? (chemo)

- This student should not be in school

-Is this infusion life sustaining or is there a potential for adverse outcome if infusion was stopped?

- Develop an emergency plan. When do you call 911, how long do you have?



School Emergency Kit

This emergency kit should be with the student at all times

- Extra clear dressings
- Plastic clamp (NEVER a metal clamp)
- Sterile gauze
- Clear tape
- Mask
- Gloves



Daily Check

Wash	When touching supplies or line/caps, you must wash with soap and water with friction for at least 15 seconds and wear gloves.
Verify	All supplies are in the emergency school supply kit
Check	Check temperature-100.4 or higher must be seen ASAP. If parent cannot get there within 1 hour, call 911. Concern is line infection or septic shock.
Inspect	Check all caps, are they loose? If they are, tighten them.



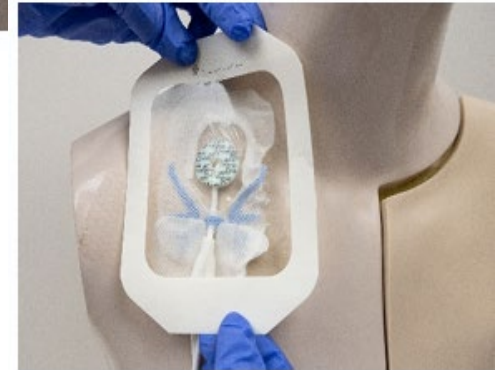
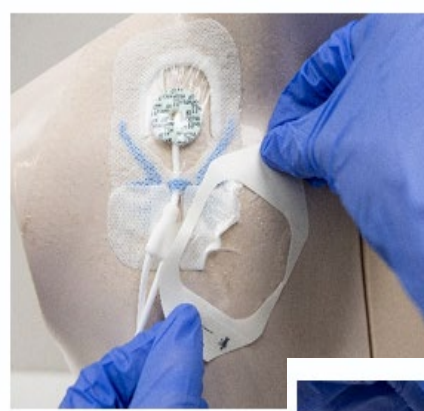
Daily Check Continued

Inspect	Check all clamps, are they clamped? If not, clamp. Are the clamps in the correct spot? If not, move them to appropriate spot and re-clamp. (Hickman/Broviac, HD catheters)
Inspect	Check all lines, are there any signs of leakage or cracking? If so, place plastic clamp between child and leak/break. Call family to pick up and take to the ED.
Inspect	Look at site itself • Are there any signs of infection; swelling, redness, or drainage? If so, call parent for immediate f/u or call 911. How does the dressing look, is it wet or dirty? If so, it needs changed ASAP, contact parent. • Is the bandage secure, intact, all edges down? If not, apply clear tape and notify parents.



Dressing Interventions

- If dressing is lifting on an edge:
 - Reinforce with clear dressing or tape
- If dressing is lifting or partially off:
 - Put a mask on
 - Do not remove
 - Reinforce with clear dressing
 - Call parent to be seen ASAP for dressing change





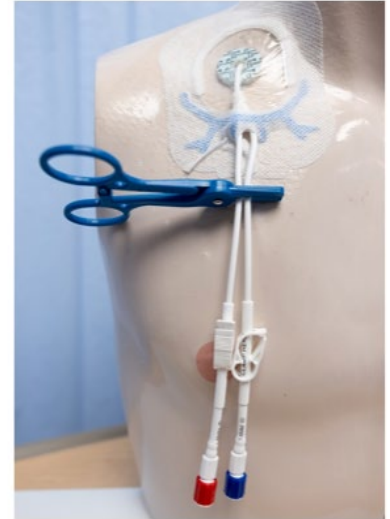
Potential Emergencies in the School

- Fever of 100.4 or higher-must be seen ASAP-could be ED or 911 if family is unable to pick up within 1 hour. Concern is a potential line infection or sepsis.
- Pain, redness, swelling, drainage at the site-must be seen ASAP, call 911 if unable to be picked up within 1 hour-this can progress to septic shock quickly.
- Swelling of chest, neck, face or arm-concern could be fluid overload, infiltrate or dislodgment.

Potential Emergencies in the School Continued

- CVC is dislodged but not fully pulled out- DO NOT reinsert-call parent ASAP, child needs to be seen.
- If catheter is leaking-clamp catheter with plastic clamp between leak and child, call parent, child needs to be seen in the ED.

Note: If child has an infusion of life sustaining medication and line was dislodged or clamped and child is no longer getting the medication, call 911.





Potential Emergencies in the School Continued

- CVC falls out- immediately put pressure on insertion site with sterile gauze and put sterile dressing over it - parent must contact provider.
- If needle falls out with implanted port-note contaminated needle



Potential Emergencies in the School Continued

- If no cap on the end of the lumen:
 - Put on a mask
 - Make sure catheter is clamped
 - Take sterile gauze from the emergency kit and tightly wrap the end of the open catheter in the gauze. Secure with tape.
 - Parents need to be contacted right away to be seen



When to Call 911

Difficulty breathing or sudden pain in the chest, neck or shoulder (Concern for PE, fluid overload, extravasation)-verify line clamped and lie on left side with head down

Very weak, limp, too weak to stand, pale cool skin (shock)

Cracked or broken CVC and can't clamp the line to stop bleeding

Fever 100.4 or higher and child can't be picked up within 1 hour

Insertion site has redness, drainage, swelling and child can't be picked up within 1 hr.

Child has life sustaining medications infusing and line is clamped or dislodged



CLABSI risk (central line-associated bloodstream infection)



Infection prevention is key-wash hands with friction with soap or hand sanitizer if line/cap needs to be touched. If dressing becomes wet or dirty, contact parent.



CVC's are their "lifeline", a bloodstream infection is an emergent concern



Any fever with a central line needs to be seen in the ED immediately or provider contacted-it is the highest level of urgency in CHCO.



Line should not be checked or touched in the bathroom.



Delegation/Training of Tasks

The only thing that can be delegated/trained will be the daily checks and interventions

- Supplies in emergency school kit-are they all there?
- Temperature check-100.4 is your threshold
- Caps-Are they secure? If not, tighten.
- Are the clamps, clamped and in the right spot? If not clamp or move to designated spot and re clamp.

- Line weakness or leakage-plastic clamp and notify parent
- Site-infection concern or dressing concern? Reinforce dressing and notify parent.

Don't forget to wash hands with soap and water and put gloves on before touching supplies or line!!!



Things you might see

- Alcohol caps
- Gus Gear
- Bandnet or other



Thank you!

