

Vascular Access

Midlines, Central Lines & PICC Lines

2019 VCNE Series

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Powerglides / Midlines



- *Placed aseptically at bedside with ultrasound guidance - typically in the upper arm.
- *Single Lumen Only - 18 gauge - 8 or 10 cm length
- *Used for difficult IV access, extended hospital stay, infusion therapy < 4 weeks - depending on the medication
- *Power injectable for CT scan
- *May be used for blood draws
 - *Benefit (not requirement) of catheter - NO TPA* *Not specifically designed for blood draws*

Midline Care & Maintenance

- ▶ Flush daily with saline
- ▶ Weekly aseptic dressing change - Do not need to change the saline lock tubing or cap (bonded)
- ▶ Guardiva disc around insertion site (CHG)
 - **NO wrong dressings** - Keep the site clean, dry, and covered

Secure with Statlock (Picture at right)

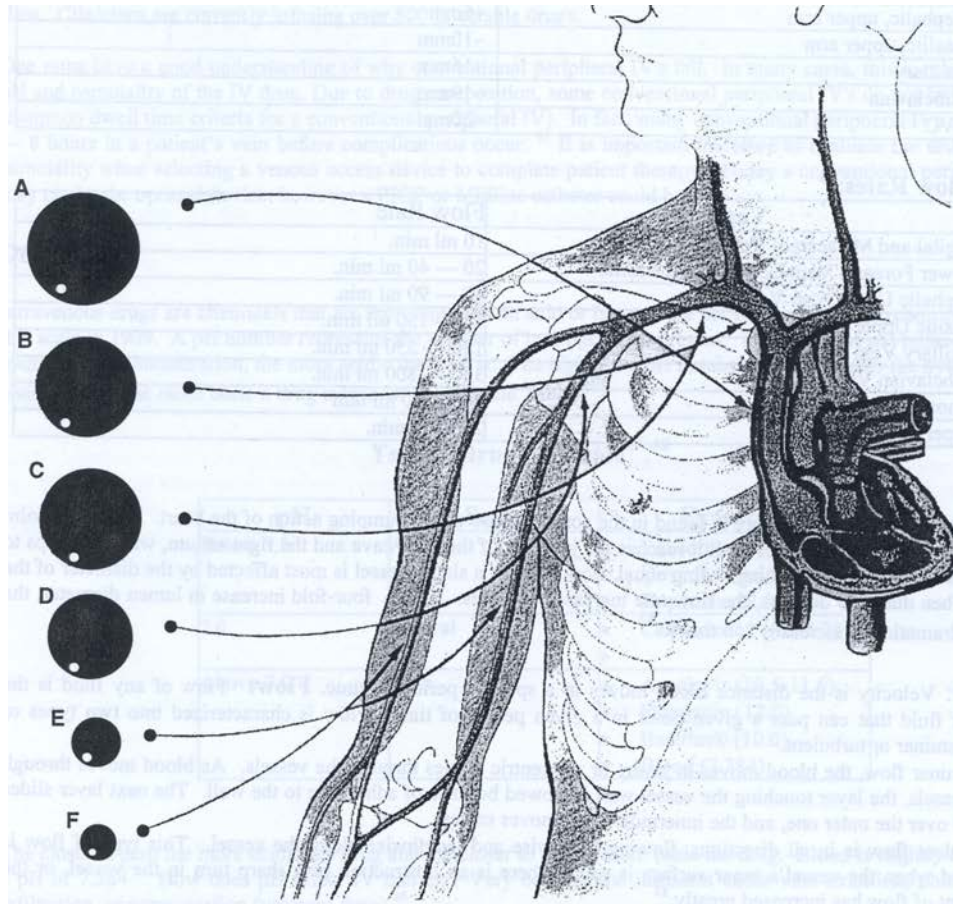
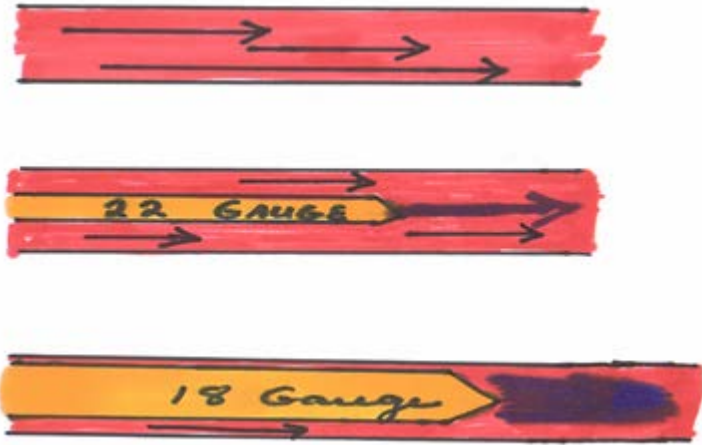
McKenna currently trialing different securement devices and dressings.
More to come in the future!



Central Venous Catheter/Central Line/PICC Line

- ▶ Placed in lower 1/3 of superior vena cava (SVC)
- ▶ 2L of blood / minute
 - ▶ Dilution of drugs
 - ▶ Vein preservation

Dilution



	VEIN	LENGTH	DIAMETER
A	SUPERIOR VENA CAVA	7 cm	20 mm
B	RIGHT INNOMINATE	2.5 cm	19 mm
C	SUBCLAVIAN	6 cm	19 mm
D	AXILLARY	13 cm	16 mm
E	BASILIC	24 cm	10 mm
F	CEPHALIC	38 cm	6 mm

Types of Central Lines- Acute Care Catheters

► Internal Jugular



Subclavian



Indications for Acute Care Catheters

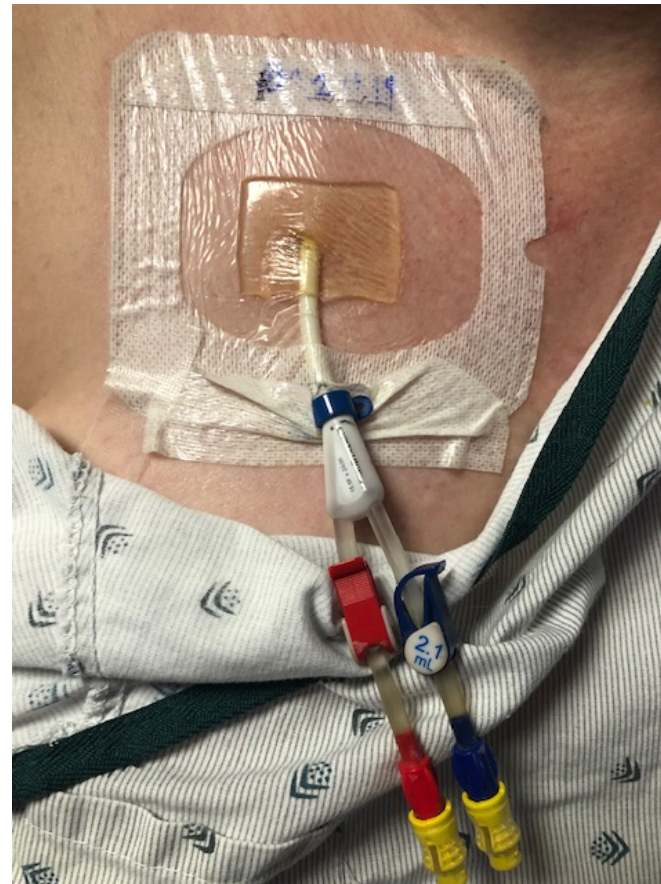
- ▶ *Unstable patients requiring hemodynamic monitoring, multiple medications, large fluid infusions, blood or blood products, or continuous parenteral nutrition
- ▶ *Short - term access for up to 14 days
- ▶ *Inability to obtain peripheral access in critically ill patients
 - ▶ MAGIC Guidelines

Dialysis Catheters

Temporary Dialysis Line



Tunneled Dialysis Line



Indications for Dialysis Catheters

- ▶ *Short - term hemodialysis (Temporary Line)
- ▶ *Long - Term Hemodialysis (Tunneled Line)
 - ▶ If in place for an extended time (months - years) and internal cuff has adhered to skin, may be left open to air with no dressing if patient is not immunocompromised.

Tunneled Central Lines (Non - Dialysis)

- ▶ PowerLine - Placed in chest -
 - ▶ Looks like a PICC
 - ▶ Sometimes called Hohn Catheter



Indications for Tunneled Central Lines (Non - Dialysis)

▶ *Inability to place PICC

*No venous access, Mastectomy, DVT, AV
Fistula, Infection, Recent Fracture, Implanted
device in arm (birth control)

*Dwell time up to 6 months (Single or Dual
Lumen)

Trifusion Catheters



Trifusion - Used for long term intravenous access (Bone marrow transplantation, hematology)

Tunnelled with dacron cuff - allows tissue to adhere

Used for long term therapy such as: Chemotherapy, chronic parenteral nutrition, & apheresis procedures

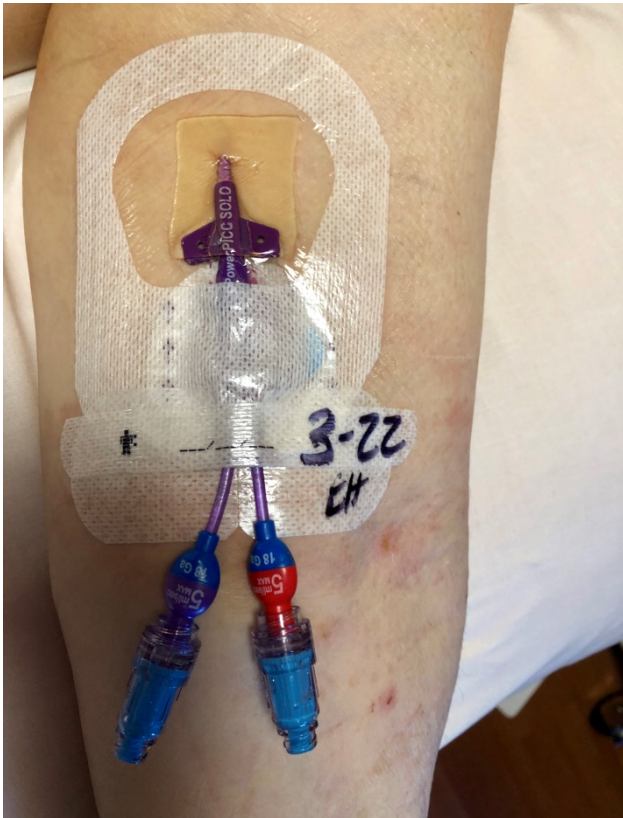
Flush daily with heparin 100 units/ml (3 mls) and clamped

Available as single, dual, or triple lumen

Cover with CHG dressing and use max plus valves

Other types: Groshong & Hickman - cannot be used for apheresis

PICC Lines (Peripherally Inserted Central Catheter)



Indications for PICC Lines

- ▶ *Infusion of solutions requiring central access in clinically stable patients
- ▶ *Infusion of medications considered irritants or vesicants
- ▶ *Infusion of medications with pH < 5 or > 9 and/or osmolality > 500
- ▶ *Infusion therapy for greater than 4 weeks - Indefinite dwell time barring any complications
- ▶ *Difficult IV access and need for multiple IV medications simultaneously
- ▶ *Hemodynamic Monitoring

Care & Maintenance of Central Lines

- ▶ Dressing & cap change every 7 days - write date on dressing and change date in computer
- ▶ Tubing changed every 24 hours (intermittent) or 96 hours (continuous) - AND with new line placement (May keep IV Fluids)
- ▶ Lines may be left in until completion of treatment or clinically indicated for new site
- ▶ Flush lines DAILY with saline (Heparin for PAC and Dialysis catheters/trifusions)
- ▶ Be PROACTIVE NOT REACTIVE

Care & Maintenance of Central Lines

- ▶ Curoso Caps
- ▶ Use curoso caps on ALL IV sites and ALL Y-sites on tubing
- ▶ Disinfect in 60 seconds
- ▶ One time use- discard when removed from IV or tubing



PICC Dressing Application



Central Venous Catheter Cap Change



CHG Dressing Tips

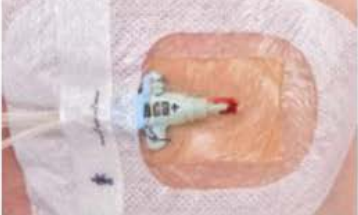





- ▶ Allow CHG & Skin prep to dry before placing dressing
- ▶ Use all 3 parts of dressing (Taco shell method) DO NOT STRETCH
- ▶ Use firm pressure to enhance adhesion along edges for approximately 7 seconds



CHG Dressing Tips

- ▶ Change if active bleeding or blood outside gel pad
- ▶ Use Surgicel 1x2 gauze to help stop active bleeding
- ▶ Change if insertion site is not visible
- ▶ Change dressing if loose, soiled, or compromised
 - ▶ Change after 48 hours if has gauze pad
- ▶ If allergic to CHG use alcohol/betadine to cleanse site
- ▶ IV 3000 dressings may be used for sensitive skin

Considerations for Monitoring Tegaderm™ CHG IV Securement Dressings

Blood	Monitor	Change
Change if active bleeding or blood present outside the gel pad.		
Site Visibility	Monitor	Change
Change if gel pad has absorbed drainage that obscures the insertion site.		
Intact	Monitor	Change
Change dressing if loose, soiled or compromised.		

For illustrative purposes only. Continue to adhere to facility protocol and refer to the product Instructions for Use for complete instructions and other important information related to the use of Tegaderm CHG Dressings.

Removal Tips

Change the dressing every 7 days or according to your facility's protocol.

- 1 Use a low and slow removal technique.
- 2 Remove dressing from where the catheter exits the dressing towards the insertion site.
- 3 Grab the corner of the gel pad and dressing between thumb and forefinger.
- 4 Apply a few drops of sterile saline or alcohol if needed to facilitate removal of gel pad.

Note: Tegaderm™ CHG Dressing is not intended to absorb large quantities of blood or drainage. Cover and protect dressing during patient bathing or showering.

For additional information and videos on application and removal go to:
[3M.com/PEAK](https://www.3m.com/PEAK)



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[3M.com/TegadermCHG](https://www.3m.com/TegadermCHG)

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IV Site & Line Assessment

- ▶ Every 1-4 hours depending on unit and patient
- ▶ Monitor for infiltration and phlebitis - document appropriately
- ▶ Monitor for infection - A Red IV is NOT better than NO IV!
- ▶ Assess external measurements of PICC/central lines

- ▶ Always assess for blood return on central lines/PICCs
 - ▶ 3mls/ 3 seconds
 - ▶ Fibrin sheath may have formed

Occluded Line - What to do?

- ▶ Consider position changes for patient
- ▶ TPA - Follow Nursing policy - Must have order from Physician
- ▶ Chest X-Ray to verify placement
- ▶ Call PICC team

Admit / Discharge with Central Line in Place

▶ Admit

- Physician order for X-Ray to check placement
- Change dressing, caps, and needle (if PAC)

▶ Discharge

- Educate patient on possible complications and line care
- Instruct to keep lines clean and dry (Cover for showers)

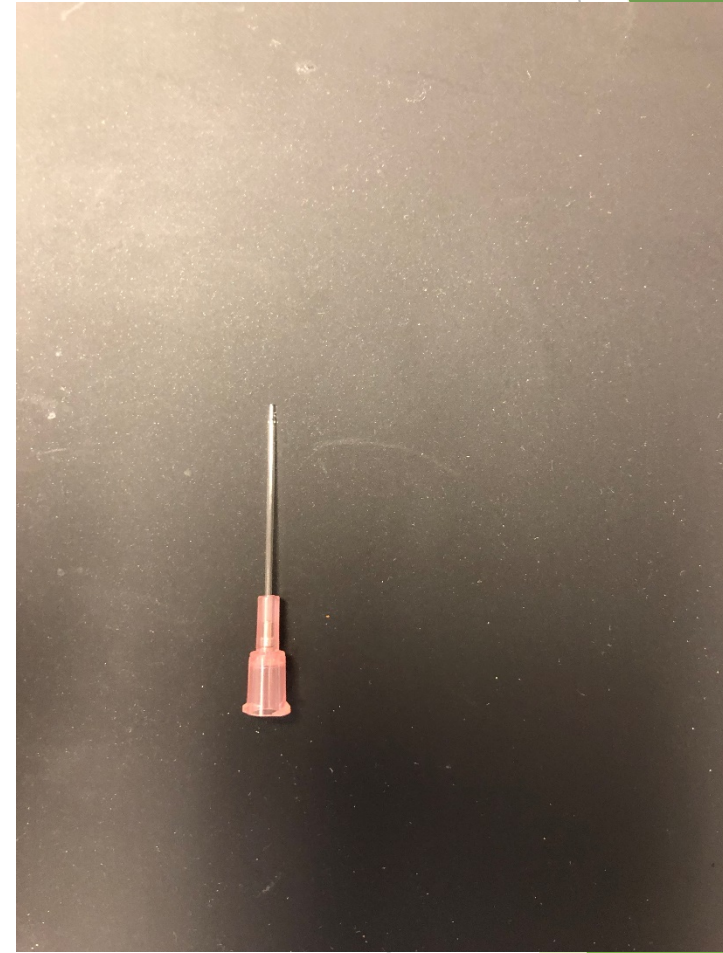
PICC Removal



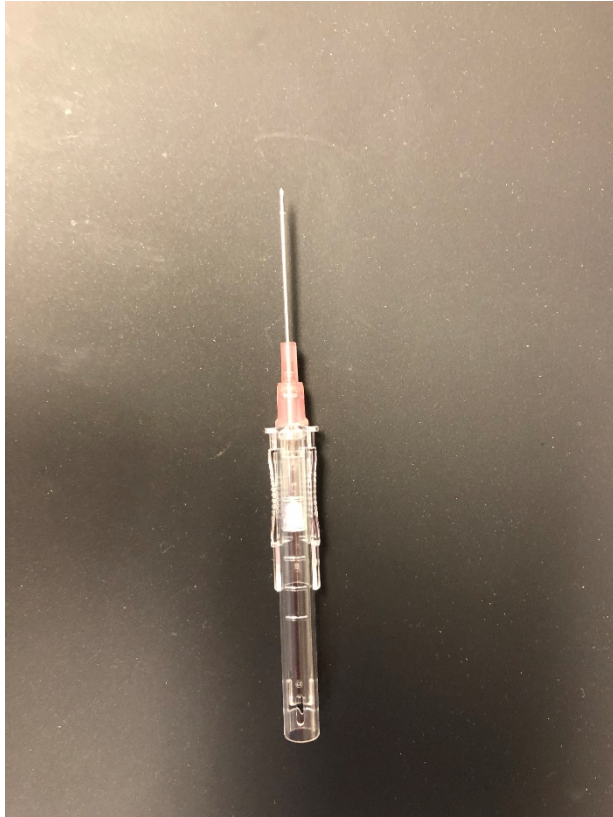
Central Line / PICC Removal

- ▶ Follow Facility Policy
 - ▶ Have patient hold breath to prevent air embolus
 - ▶ Hold pressure approximately 5 minutes
 - ▶ Ensure catheter is intact
 - ▶ Place occlusive dressing over site for 48 hours
 - ▶ Betadine ointment, gauze, and tegaderm

What is What?



What is What?



Questions??????

- ▶ Avera McKennan PICC Team 605-322-2055
 - ▶ Pager 605-322-0478
 - ▶ Voalte
 - ▶ erin.haak@avera.org

References

INS Standards of Practice

Center for Disease Control Recommendations

MAGIC Guidelines

<https://annals.org/aim/fullarticle/2436759/michigan-appropriateness-guide-intravenous-catheters-magic-results-from-multispecialty-panel>

Facility Policies