

**CONEMAUGH MEMORIAL MEDICAL CENTER**

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GRADUATE MEDICAL EDUCATION POLICY**

progress to the competency phase and be able to place lines independently (Indirect or Oversight supervision) after a minimum of ten (10) lines.

**2. Requirements:**

- a. Must be done prior to any attempt to place CVC in a patient:
  - i. MMC Central Line training course during orientation with verification of proficiency (VOP) passed or equivalent as determined by the program director if unable to attend orientation.
    - a) See Appendix C
  - ii. For Residents Rotating in the ICU, attendance at a training session in the Medical Skills Learning Center (MSLC) the month prior to their rotation.

**3. Appropriate Patient Selection:** The following are **Not** appropriate patient for a Learner to place a CVC

- a. Difficult patient
- b. Large Bore Catheter
- c. Patient in extremis or who placement must be accomplished in a limited time frame

**4. Supervision:** Direct Supervision is required for all lines and may be provided by

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**2. Requirements:**

- a. Be in the competency phase of CVC pITmlrJTJc6m7aft

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## **Appendix A: Standard Central Venous Catheter (CVC) Insertion**

This policy is intended to promote patient safety during the placement of routine central venous catheters. This policy is not intended as a substitute for the clinical judgment of an attending physician involved in a CVC placement.

- A. Indications:** Clinical indication and reasoning of site must be documented after the procedure in the EPIC CVC documentation tool.
  
- B. Difficult Patients or Sites:** A resident at Learner Phase must have an attending or resident at Teacher Phase assess the patient to determine level of difficulty in CVC insertion prior to initiating the procedure. Competency Phase residents should communicate this assessment, specifically identifying any complicating conditions directly to the supervising attending prior to initiating the procedure.
  
- C. Trainees at Competency Phases (Learners are not permitted to perform)** must notify the supervising clinician prior to CVC placement or have a qualified physician (attending

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- a. Vascular anatomy and location of the target vessel with ultrasound. The provider must be able to reliably distinguish the artery from the vein using anatomy, location, and compressibility and/or Doppler.
  - b. Demonstrate the patency of the target vessel
4. A qualified supervisory physician (based on the trainee's level of competency) must be identified prior to starting the procedure. This qualified physician must be aware of the procedure prior to any attempt, unless the placement is a true emergency (e.g. code blue, profound shock). Anticipated site selection, patient-related difficulties, and appropriateness for CVC placement must be reviewed with the supervising physician.
  5. An attending physician responsible for the placement must also be identified and documented in the medical record. The attending physician should be notified prior to placement unless urgency of the clinical situation precludes it, at which time the attending will be notified immediately after placement.

**F. PROCEDURE (routine, non-emergency CVC insertion)**

1. The patient on whom the procedure is being performed is to be identified per the protocol. A time out will be performed prior to the procedure.
2. Personal protective equipment that fulfills sterile precautions will be utilized: sterile gown, mask, cap, and sterile gloves. A sterile ultrasound probe cover is required even if a second clinician will provide ultrasound assistance.
3. An initial prep of Hibiclens/chlorhexidine should be applied and then the patient draped appropriately.
4. The clinician is expected to maintain sterile technique throughout the procedure. If sterile technique is accidentally broken, the clinician should stop the procedure and restart sterile preparations as clinically indicated (e.g. replace gloves, obtain second sterile instrument/tray.)
5. The clinician will deliver local anesthesia to completely anesthetize the insertion and secondary securing site.
6. The clinician will identify anatomical landmarks and then sonographically reassess the anatomy, location, and patency of the target vessel. The clinician will correctly identify the position/location of introducer needle.
7. Under direct ultrasound guidance, (IJ and femoral) the clinician should puncture the vein, determine return of dark venous blood with non- pulsatile flow, and advance the wire into the vessel only if no resistance is met. If pulsatile or bright red blood is returned, stop the procedure and refer to escalation guidelines.



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**Appendix B. Competency attestation form to be sent to the attending/supervising physician by the resident prior to insertion:**

Resident X has placed at least 10 Central Venous catheters successfully and is now eligible for competency phase certification in CVC placement. Achieving this level allows them to place CVC independently and without direct supervision. I have directly observed resident X performing this CVC and certify they followed the CVC placement check list and attest to their competency and certify them as capable of safely performing CVC placement with only indirect supervision.

Yes

No (No requires comment): Please comment on areas resident needs to remediate before placing central lines with indirect supervision

(Check list)

1. Obtained informed consent
2. "TIME-OUT": Identify patient using two valid patient identifiers  
"TIME-OUT": Review patient allergies  
"TIME-OUT": Confirm procedure to be performed, including site and side of patient
3. Care Provider and all assistants wear caps and masks
4. Sanitize hands
5. Select appropriate site of venipuncture and visualize the vein using ultrasound (femoral and internal jugular)
6. Prepare venipuncture site with chlorhexidine
7. Operator should now don sterile gown and gloves and then place on patient a sterile drapes
8. Identify Anatomical Landmarks appropriately
9. Reconfirm target vessel location by Ultrasound (femoral and IJ)
10. Anesthetize area using 1% Lidocaine
11. Cannulate the target vessel using landmarks and ultrasound assistance when appropriate
12. Venipuncture successful in 2 or less attempts
13. Confirm vessel entry by aspiration of blood

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14. Insert J wire into needle, advancing wire without resistance, watch for ectopy
15. Confirm wire in target vessel with ultrasound using multiple views when appropriate and removes needle
16. Stab-incision with a scalpel at the wire entry site
17. Dilate the catheter tract using the dilator then remove dilator
18. Insert catheter over-the-wire to its appropriate length
19. Remove wire and make sure it is intact. Close the clamp on the port promptly after removing the wire
20. Attach a 10ml syringe to the distal port and attempt to aspirate blood. If successful, follow this by flushing the port with 5-10 cc of saline. Repeat for other ports.
21. Suture catheter in place.
22. Re-clean surgical site to remove all excess blood and apply another chlorhexidine wash
23. Place Biopatch at cannulation site and cover via an occlusive dressing
24. Use Ultrasound to check for the presence of Pneumothorax for IJ and SC placed catheters
- 25.

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**VOP RUBRIC FOR MODULE IV      Central Venous Lines**

Resident:

Evaluator:

Date:                      Must indicate that they have read Chapter 12, Intravascular Devices in Principles of Critical Care (AccessSurgery)

<b>Subclavian Access</b>				
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
<p>Fails to Prep the patient or sets up the field efficiently and cannot use at least one technique ( U/S or Landmarks to accurately) place the CVL</p>	<p>Preps the patient and sets up the field efficiently but cannot use at least one technique ( U/S or Landmarks to accurately) place the CVL</p>	<p>May, may not or incompletely discusses patient positioning, use of rolls or bumps. Indicates that the patient is prepped. May or may not indicate sterile technique and universal precautions. Sets up the field efficiently. Uses both U/S (if available) and landmarks to accurately place the CVL. Discusses some of the four common procedure related complications (arterial puncture, pneumothorax, air embolism, and arrhythmia), but does not or incompletely discusses maneuvers to minimize their occurrence and how to treatment these complications.</p>	<p>Discusses patient positioning, use of rolls or bumps. Discusses sterile technique and universal precautions. Discusses prepping the patient. Sets up the field efficiently. Uses both U/S (if available) and landmarks to accurately place the CVL. Discusses some of the four common procedure related complications (arterial puncture, pneumothorax, air embolism, and arrhythmia), maneuvers to minimize their occurrence and how to treatment these complications. Does not or incompletely discusses the advantages and disadvantages of the subclavian approach. Incompletely or does not discuss which approach is associated with the least and most infections complications. Does not or incompletely discusses supraclavicular</p>	<p>Discusses patient positioning, use of rolls or bumps. Discusses sterile technique and universal precautions. Discusses prepping the patient. Sets up the field efficiently. Uses both U/S (if available) and landmarks to accurately place the CVL. Discusses the four common procedure related complications (arterial puncture, pneumothorax, air embolism, and arrhythmia), maneuvers to minimize their occurrence and how to treatment these complications. Discusses advantages and disadvantages of the subclavian approach. Discusses which approach is associated with the least and most infections complications. Reviews the long-term complications associated with central venous access and how to minimize these occurrences. Discusses the</p>





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associated with the least and most infections complications. Does not or incompletely discusses the posterior approach for internal jugular vein.

Reviews the long-term complications associated with central venous access and how to minimize these occurrences. Discusses alternative posterior approach for internal jugular and in what circumstances would one consider an alternative approach.

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does not or  
incompletely  
discusses  
maneuvers to  
minimize their  
occurrence and how  
to treatment these  
complications.

to treatment these  
complications.  
Does not or  
incompletely  
discusses the  
advantages and  
disadvantages of the  
femoral vein  
approach.  
Incompletely or  
does not discuss  
which approach is  
associated with the  
least and most  
infections



