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| Policy and Procedure<br>Form<br><br><b>CENTRAL LINE INSERTION</b> | <b>Department:</b> <u>Nursing Services</u><br><b>Dept. Approval by:</b> _____<br><b>Admin. Approval:</b> _____ |
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**PURPOSE:** To assist nursing personnel in preparing for the insertion of central line.

**POLICY:** Nursing personnel (certified competence) of Name of Medical Center will have a basic knowledge of setting up and assisting the physician with central line insertion competently.

**EQUIPMENT:**

1. Multi-Lumen Central Venous Catheterization Kit or Quad-Lumen central Venous Catheterization Kit
2. IV solution as ordered by physician and IV tubing
3. Interlink Leverlock
4. 3 or 4 Buff Caps (Interlink Injection Site)
5. Heparin Lock Flush solution
6. Syringes and needles
7. Sterile gloves
8. Tape
9. Transparent dressing

If CVP monitoring is required, gather the following additional equipment:

10. Hewlett Packard Pressure Module and Cable
11. Pressure tubing with transducer
12. 500 cc Normal Saline
13. 1000 units Heparin
14. Pressure bag

**\*Note:** Multi-Lumen Kit has three lumens catheter: Distal (16 Ga), Medial (18 Ga), & Proximal (18 Ga)

Quad-Lumen Kit has four lumens catheter: Distal (16 Ga), Medial 1 (14 Ga), Medial 2 (18 Ga), Proximal (18 Ga).

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**PROCEDURE:**

1. Ensure an informed consent is obtained by the Physician.
2. Explain procedure to patient and reassure patient during the entire process.
3. Monitor patient's vital signs, O2 saturation, and EKG rhythm for arrhythmia continuously during the procedure.
4. Obtain appropriate equipment.
5. Wash hands.
6. Prepare IV solution and flush the tubing.
7. Prepare Heparin Flush solution in syringe.
8. Position patient in a trendelenburg or head-down tilt position (as tolerated).
9. Reduce PEEP if patient is on a ventilator.
10. Position patient's head facing away from side of catheter insertion to prevent contamination of insertion site.
11. Assist Physician with central line insertion.
12. Once catheter is inserted and Physician has capped the lumens, aspirate each port for blood return and flush each port. with 3 ml of Heparin Flush solution.
13. After the Physician has sutured the line, cleanse the insertion site and apply transparent dressing to the site.
14. Call for portable Chest x-ray for verification of catheter placement and ruling out of pneumothorax.
15. Once the catheter tip position is confirmed, connect IV tubing to each port using the Interlink Leverlock and initiate IV solutions as ordered.

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16. Documentation:
  - a) Date and time of procedure
  - b) Insertion site
  - c) Application of dressing
  - d) Insertion site condition
  - e) Patient tolerance of procedure
  
17. Observe for any potential complications, such as pneumothorax.

If CVP monitoring is required, set up HP monitor as follows:

18. Insert HP pressure module to the HP monitor.
19. Plug transducer cable into HP pressure module.
20. Label the pressure module and set the appropriate scale for pressure being monitored.
21. Wash hands.
22. Inject 1000 units of Heparin into 500 cc Normal Saline bag.
23. Open transducer pressure tubing.
24. Spike outlet port of flush bag with pressure tubing and flush the entire tubing.
25. Ensure the system is entirely free of air bubbles, including the stopcock and transducer.
26. Tighten all connections and replace vented (white) caps on tubing with “deadend” (blue) caps in kit.

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27. Place flush solution bag in pressure bag and inflate to 300 mm Hg. (This system will deliver 3 – 4 cc of flush solution per hour)
28. Label system with date and time and attach appropriate color sticker.
29. Connect flush system with the transducer to the transducer cable.
30. After the catheter is in place, connect pressure tubing to one of the lumen ports with aseptic technique and flush the tubing and catheter.
31. Level, calibrate and zero the transducer.
32. Assess CVP waveform and obtain CVP readings.