

CONSIDERATIONS:

1. A physician's order is needed to use a central line for obtaining blood specimens. The order should specifically read "Obtain blood for... via the central line."
2. In general, blood cultures should not be obtained via central lines:
 - Blood cultures are usually drawn to determine infection in blood. Blood drawn through a line can indicate either blood infection or contamination of the line**
 - a. Clarify with the physician if blood cultures should be drawn via central line or venipuncture
 - b. If blood cultures are ordered, review procedure *Labs and Specimens – Blood: Culture*
3. In general, if the line's patency is maintained with heparin, do not use the line to obtain blood for coagulation tests (PT, PTT, INR), as the heparinization may compromise the test results. If the line is used, results are high and are going to be used to adjust anticoagulant medication, collaborate with physician regarding retesting via direct venipuncture.
4. Sequence for filling blood collection tubes:
 - a. Blood tubes for different tests have different preservatives within; the tubes are color-coded
 - b. When drawing blood for multiple tubes, collection must be done in color order:
 - i. Yellow: Blood culture
 - ii. Light blue: Coagulation
 - iii. Red: Clot activator
 - iv. Tiger-Top: Serum separator
 - v. Dark Green: Sodium heparin
 - vi. Light green: Lithium heparin
 - vii. Lavender: EDTA
 - viii. Pale yellow: Acid citrate
 - ix. Gray: Oxalate/fluoride
 - c. Blood tubes need to be gently inverted 5 - 10 times to mix preservative with the blood. Do not shake

EQUIPMENT:

Gloves
Blood tubes for ordered blood tests
Vacutainer/luer adaptor device
Alcohol wipes
2 - 3 10 mL syringes filled with Normal Saline Flush
Heparin filled syringe, if needed for last flush
Biohazard sharps disposal container
Protective eye wear, optional
Disposable apron, optional
Impervious trash bag

PROCEDURE:

1. Adhere to Standard Precautions.
2. Explain the procedure and purpose to the patient/caregiver.
3. Assemble the equipment on a clean surface, close to the patient. Line-up blood tubes in appropriate sequence for obtaining blood.
4. Place patient in comfortable position, while ensuring the catheter is accessible and lighting is adequate.
5. Stop infusion (if continuous) and don gloves.
6. Clean cap/needleless connector with alcohol wipe, using friction for at least 15 seconds and allow to air dry:
 - a. If patient has implanted port, access port as per *Infusion Therapy – Central Line Type: Implanted Port*
 - b. If blood cultures ordered, change needleless connector
7. Attach 10 mL saline filled syringe to needleless connector and flush.
8. Pull back syringe plunger to check for blood return.
9. If unable to withdraw blood, try the following:
 - a. Ask patient to cough
 - b. Ask patient to take a deep breath and to hold breath
 - c. Reposition patient's arm above patient's head
 - d. Change patient's position
 - e. Flush catheter again with saline
 - f. If still unable to obtain blood, alert physician, obtain venipuncture order, evaluate if thrombolytic instillation needed
10. Remove syringe and discard into biohazard container.
11. Insert vacutainer/luer adaptor unit onto the needleless connector and draw discard tube 4-5ml.
12. Insert each blood tube into the vacutainer holder in correct sequence.
13. Remove vacutainer/luer adaptor unit from needleless connector.
14. Clean needleless connector with alcohol wipe, using friction for at least 15 seconds and allow to air dry.
15. Flush line with 20 mL of saline flush, using a pulse-like push, to remove all blood from line.
16. Follow with heparinized flush if ordered, or resume continuous infusion.
17. Label all blood tubes with patient name, date of birth, date, time, and your initials.
18. Put all blood tubes in biohazard specimen bag and seal.
19. Arrange for laboratory pick-up or transport. Specimens in biohazard bags must be transported in a transport bag to lab.
20. Discard soiled supplies in appropriate containers.

AFTER CARE:

1. Document in patient record:

- a. Date, time and procedure performed
 - b. Blood samples drawn, identity and location of laboratory where specimens taken
 - c. Amount of normal saline and heparin flush, including strength of heparin
 - d. Patient's response to procedure
 - e. Instructions given to patient/caregiver
2. Complete requisition and bring specimens to lab. See *Labs and Specimens – Requisitions/Transportation*
 3. Follow-up on blood test results. If blood test results outside normal range, collaborate with physician about changes to care plan.

REFERENCE:

- Clinical & Laboratory Standards Institute (2007). Standard H03 - A6: Order of Draw Using Evacuated Blood Tubes.
- Cook, L. (2007). Choosing the Right Intravenous Catheter. *Home Healthcare Nurse*, 25(8), 522 – 531.
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- Infusion Nurses Society, Inc. (2011). *Policies and Procedures for Infusion Nursing*. 4th Edition. INS, 220 Norwood Park South, Norwood, MA
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- World Health Organization (2010). WHO Guidelines on Drawing Blood: Best Practices in Phlebotomy. Geneva: Author.