Instructions  Central Line Blood Culture Draw

Criteria:  
✓ Use in conjunction with Central Line Procedures (Adult and Pediatric/Neonatal)  
✓ Provider order for blood culture collection.

Adults:  
✓ Collect 2 sets of cultures from different sites.  
✓ Collect at least one set of cultures from a peripheral site.  
✓ Clarify which line(s) to obtain sample from with the provider.

Pediatrics:  
✓ Draw 1.5 mL minimum for culture when collecting aerobic only (standard). If both aerobic and anaerobic needed, instill minimum of 1 mL in each bottle when collecting. NOTE: Amount of blood depends on weight of patient (see weight based minimums below in step #7).  
✓ Anaerobic sample should be sent only in the following circumstances: Outpatients, patients with immunodeficiency, malignancy or after bone or human stem cell transplant, patients with gastrointestinal disorder, or at physician’s request due to concern for anaerobes. Sending only an aerobic specimen is sufficient for all other patient populations.

Supplies:  
Line draw blood collection kit containing:  
- 1 set of blood culture bottles (aerobic and anaerobic) or single aerobic bottle  
- Alcohol prep pads  
- Angel Wing Safety System Adapter  
Other supplies: Gloves, patient labels and requisition, 20 mL syringe (adults), 3 -10 mL (pediatrics)

1. Do not draw from a line that has had an antibiotic/antimicrobial agent administered through it during previous hour.  
2. Using an alcohol prep pad, scrub tubing/cap junction (apply friction for a count of ten). Allow to dry.  
3. Remove plastic cap of each bottle and scrub top of each bottle with 70% alcohol.  
4. Disconnect tubing and cap and attach syringe to CVC lumen hub.  
5. Collection:  
   a. For adults, collect up to 20 mL of blood (10 mL for each bottle). If only able to obtain less than 20 mL, divide volume in half for each culture bottle.  
   b. For pediatrics, collect blood sample amount according to weight:  
      1 – 5 kg = 1 mL for each bottle/1.5 mL if aerobic only  
      5 – 15 kg = 1.5 mL for each bottle  
      15 – 40 kg = 3 mL for each bottle  
      >40 kg = 5 mL for each bottle  
6. Connect filled syringe to the Angel Wing Safety System Adapter.  
7. Holding the syringe plunger for control of draw, press and hold adapter down over the top of the aerobic bottle to fill with half of the blood obtained (see #4 above for pediatric minimums). Do not add more than 10 mL into each bottle. Remove adapter and syringe from aerobic bottle and fill anaerobic bottle with remaining blood. Do not aspirate air into the anaerobic bottle. Gently invert bottles to mix contents.  
8. Label each bottle with patient’s name and medical record number. Do not cover bar code with label.  
9. Record the type of central line on the requisition, indicate location of the line (e.g. right or left arm) and the lumen color, if desired.  
10. Place bottles in bag (1 set per bag) with requisition.
Procedure for Differential Time to Positivity (DTTP) Culture Method

Indication: Suspected Central Line-associated Blood Stream Infection (to rule out CLABSI)

PROCEDURE for obtaining blood culture samples:

1. Adults: Clarify which CVC(s) to sample from when more than one present. Pediatrics: Sample all CVCs and all lumens.
2. Peripheral vein and CVC line samples must be obtained within 15 minutes of each other.
3. MINIMUM blood volume for each bottle: Adults: 5 mLs; Pediatrics: 1 mL in each bottle when collecting both aerobic and anaerobic; 1.5 mL if collecting aerobic (standard) only.
4. The volumes of blood obtained from the peripheral vein & from the CVC must match to ensure accuracy. (e.g. if only 12 mLs is obtained from peripheral stick, obtain only 12 mLs from CVC)
5. For Pediatrics, implement procedural support when indicated; refer to Pediatric Phlebotomy Procedure. Apply topical anesthetic to venipuncture site(s) when indicated.
6. Draw peripheral blood sample first since the amount of blood obtained will determine how much is obtained from the CVC.
   a. Prepare Blood Culture Bottles & print Apex Microbiology Lab Requisition for Blood culture, Peripheral (DTTP)
      i. Label each bottle with patient label (do not cover barcode on bottle)
      ii. Write, “PERIPHERAL” on the labels.
      iii. Remove plastic cap and clean top of each bottle with 70% alcohol swab. Allow to air dry.
   b. For patients with NO contraindication for use of chlorhexidine products: Cleanse the venipuncture site with Chloraprep Single Swabstick using a back and forth motion for 30 seconds. Allow to air dry. NOTE: If skin is soiled, clean with 70% isopropyl alcohol before using Chloraprep.
      For patients with a contraindication for use of Chlorhexidine products DO NOT USE CHLORAPREP. Follow this procedure: Clean skin of venipuncture site with 60-second friction scrub of 70% isopropyl alcohol to a 5 cm circular area. Apply 10% PVP Iodine to venipuncture site skin in a circular motion to a 5 cm area starting in the center. Allow to air dry. Following the venipuncture, remove residual iodine from patient’s skin with 70% isopropyl alcohol.
      c. Collections:
         i. For adults, draw 20 mLs (10 mLs for each culture bottle). If only able to obtain less than 20 mL, divide volume in half for each culture bottle.
         ii. For pediatrics, refer to weight based guide:
            1 - 5 kg = 1 mL for each bottle/1.5 mL if aerobic only
            5 - 15 kg = 1.5 mL for each bottle
            > 15 kg = 3 mL for each bottle
         d. Instill into AEROBIC bottle first, then into ANAEROBIC bottle. Do not aspirate air into the anaerobic bottle. Gently invert bottles to mix contents.
7. Draw the CVC blood sample second:
   a. Do not draw from a lumen that has had an antibiotic/antimicrobial agent administered through it during previous hour. Avoid drawing from lumens with vasoactive med infusions for patient safety.
   b. Prepare Blood Culture Bottles & print Apex Microbiology Lab Requisition for Blood culture, Central (DTTP)
      i. Label each bottle with patient label (do not cover barcode on bottle)
      ii. Write, “LINE” on the labels.
      iii. Remove plastic cap and clean top of each bottle with 70% alcohol swab. Allow to air dry.
      iv. Write the TYPE and SITE of the CVC (e.g. R IJ, L Fem) on the Micro Lab Requisition.
   c. Cleanse distal lumen (adults) tubing/cap junction with 70% isopropyl alcohol (apply friction for a count of ten). May use other lumen if distal lumen is non-functioning. Pediatrics: Collect sample from all lumens.
   d. Disconnect tubing/cap and attach syringe directly to lumen port.
   e. DO NOT aspirate a discard volume.
   f. Draw the matching volume obtained for the peripheral culture and divide volume in half for each culture bottle, unless collecting only aerobic sample.
   g. Instill into AEROBIC bottle first, then into ANAEROBIC bottle. Do not aspirate air into the anaerobic bottle. Gently invert bottles to mix contents.
      h. If more than one CVC is being sampled, label with the site, e.g. “Line-Right IJ” & “Line-Right Fem”
8. Each set of culture bottles (aerobic & anaerobic) should be labeled and submitted with a requisition specifying “Peripheral” and “Line” (If patient has more than one CVC, specify insertion site “CVC line-R IJ”). Send both sets with 2 requisitions (peripheral & CVC) in ONE specimen bag to the lab.