 <p style="text-align: center;"><b>Covenant Health Laboratory Procedure</b></p>	<b>FACILITY: Covenant Medical Center/Covenant Children's Hospital</b>
	<b>DEPARTMENT: Laboratory</b>
	<b>SECTION: General Laboratory</b>
	<b>AUTHOR: Steve Madrid</b>
<b>TITLE:</b>	
<b>Blood Culture Collection</b>	


**STATEMENT OF PURPOSE:**

Blood cultures are critically important in infectious disease diagnosis. These specimens are ordered when the physician suspects that the patient has a blood infection, (Septicemia). Blood cultures are commonly ordered at the time a patient is “spiking” a temperature. When collecting blood cultures it is important to use strict aseptic, (infection-free) technique. You must not allow the specimen to be “contaminated” by an organism not already present in the patient’s bloodstream. Because of this, blood cultures require more attention to detail than ordinary phlebotomy sticks. Blood cultures are most commonly ordered in pairs. We have a better chance of isolating the organism causing the infection if we collect two cultures from different sites. This information helps physicians identify the bacterial infection and what antibiotics to use to treat it.

“Blood cultures times two” from adults and older children ordinarily means an aerobic and an anaerobic bottle drawn from two different sites, one right after the other or 15-30 minutes apart. Babies will usually need only one pediatric bottle drawn from one site. A mistake in skin preparation can cost thousands of dollars in unnecessary charges to the patient and the hospital system. Doctors tend to keep patients in the hospital longer than necessary because they are unsure if an infection is present because of contaminated blood cultures. Doctors may over medicate or under medicate patients with antibiotics because of wrong information from “contaminated” blood cultures.

**TEXT**


- I. Culture Vials and Volume guidelines
  - A. BACTEC™ Plus Aerobic /F (HAS BLUE CAP)
    1. Contains resins for antibiotic neutralization. Recommended for use in adult populations due to higher blood volume capacity and resins. Recommended for 3.0 to 10.0 mL (8.0 to 10.0 mL optimal) blood volume.
  - B. BACTEC™ Lytic/10 Anaerobic /F (HAS PURPLE CAP)
    1. Non-resin medium containing the blood lysing agent saponin. Provides better time-to-detection and recovery than standard anaerobic media. The lysis of red cells provides additional nutrients for microbial growth and reduced blood background. The lysis of white cells releases phagocytized organisms. Recommended for 3.0 to 10.0 mL (8.0 to 10.0 mL optimal) blood volume.
  - C. BACTEC™ Peds Plus (HAS PINK CAP)
    1. Contains resins for antibiotic neutralization.

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2. Optimized to detect organisms associated with pediatric septicemia and for low blood volumes (1.0 – 3.0 mL optimal; 0.5 to 5.0 mL recommended).
3. mls. minimum in blue bottle, leaving out yellow bottle acceptable with very difficult draws.
4. Pedi bottle can be substituted for adults with difficult sticks.

II. Methods for collecting blood cultures:

- A. Butterfly method: (Preferable method because optimal amounts are collected in each bottle. Closed system -- less chance for contamination)
  1. Attach a butterfly to a vacu-holder, being careful not to touch the needle and connection sites in order to minimize contamination.
  2. Set the bottles upright on a flat surface and mark them 10 mL above the broth lines using the 5mL increment lines as a guide. Remove caps and prep bottles with alcohol. If bottles do not have caps, do not use bottles.
  3. After locating a venipuncture site, prep the site with a Chlorhexidine blood culture prep sponge using a circular scrubbing motion. Scrub for 30 seconds. Let the site air dry. Do not blow on or fan the site. Let it air dry. Prep your entire “feely finger” with the pad.
  4. After you have prepped the site and your finger, try not to touch anything with your prepped finger. (You will contaminate the site if you do). Use the disinfected finger to feel for the vein at the prepped site only if you have to, in order to minimize contamination.
  5. If using betadine, you may opt to use a new alcohol pad and swipe through the prepped venipuncture site once in order to give yourself a better visual track of where the vein is located.
  6. Try to insert the butterfly into the prepped vein without touching directly into the prepped site, but if you find it necessary to touch the site, your Prepped finger will help to minimize the possible contamination.
  7. After getting a blood return, hold the aerobic/silver label bottle upright close to the patient. Bring the vacuholder attached over the aerobic/silver label bottle

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and puncture the bottle. Hold in place until vacuum brings blood up to the pre-marked line. Repeat with anaerobic/purple label bottle.

\*\*\*Do not attach blood culture bottles to direct vacuholder in vein. This can cause contamination because you will have to take bottle off repeatedly to determine amount in bottle and can be dangerous to patient because beads can be introduced into blood stream\*\*\*

**B. Syringe Method:**

1. The prepping process is exactly the same as above. The only difference is you may opt to use 10 ml. syringes to collect your cultures. In most cases try to use the butterfly method for optimal amounts, and for direct connections, but for the more difficult stick, syringes might be more appropriate.
2. After collecting 10 mls. of blood in syringe, change to clean needle prior to injecting bottles (5 mls in aerobic/silver label bottle , 5 mls in anaerobic/purple label bottle). Be careful not to touch connections in order to minimize chance of contamination.

**C. Pedi Blood Culture Collection:**

1. Prepping the site is exactly the same as on adults. 1-3 mL in 1 Pedi/pink label bottle.  
 \*\*\* There is no micro method to collect blood cultures on children. Minimum of 1 ml. must be collected via sterile stick for Pedi/pink label Bottle. \*\*\*