

## Blood Culture Collection Guidelines

### For optimal recovery of microorganisms from blood

- In acute febrile illnesses such as meningitis and bacterial pneumonia, when empiric antibiotic therapy may be necessary, or in patients with infectious diseases who are to undergo emergency surgery, 2 separate samples should be drawn immediately in tandem, from opposite arms.
- If the origin of fever is unknown, 2 blood cultures can initially be drawn with an interval of 45-60 minutes. The reason for the time interval is to determine if a continuous or intermittent bacteremia exists. Two more sets of blood cultures can then be drawn 24-48 hours later if necessary.
- For patients with acute infective endocarditis, 3 blood cultures from 3 separate venipunctures should be drawn during the first 1-2 hours of evaluation, then therapy begun. In cases of suspected subacute bacterial endocarditis, obtain 3 blood cultures on the first day, spacing the venipunctures at least 30 minutes apart. If these are negative, obtain 2 more sets on subsequent days.
- Use strict aseptic technique and standard precautions during venipuncture. To minimize the risk of contamination, the venipuncture site and rubber septum of blood culture bottles require disinfection. Cleanse the venipuncture site first with 70% isopropyl alcohol, air dry, and then apply the main disinfectant. Disinfection with tincture of iodine (or 10% povidone iodine) requires 1 minute of air dry time once disinfection is completed. Do not palpate the vein after disinfection unless a gloved finger is also disinfected. Decontaminate the rubber septum on the blood culture bottle(s) with 70% isopropyl alcohol, which can be allowed to air dry while venipuncture is performed.
- **Required Volume:** The volume of blood is critical because the concentration of organisms in the majority of bacteremias is low, especially if the patient is on antimicrobial therapy.  
 Adults: 16-20 mls of blood per venipuncture.  
 Neonates, children, difficult to draw adult patients: 1-3mls of blood per venipuncture.

Aliquot as follows:

Amount per Venipuncture	Amount in BACTEC Standard Aerobic bottle or Plus Aerobic (for patients on antimicrobial therapy)	Amount in BACTEC Lytic (Anaerobic) bottle
16 – 20 mls	Split equally between aerobic and lytic bottles	
13 – 16 mls	8 mls	5 – 8 mls
10 – 12 mls	5 – 7 mls	5 mls
5 – 9 mls	Entire blood amount	0
1-3 mls	Entire amount to <b>BACTEC Pediatric Plus bottle</b>	

- Blood should be drawn into a sterile syringe and then transferred to the blood culture bottle(s). Drawing blood directly into blood culture bottles is not recommended. Alternately, blood can be drawn first into collection tubes containing SPS but should never be drawn into tubes containing other anticoagulants. Once blood is transferred to culture bottles, invert the bottles gently to prevent clotting.
- Blood cultures obtained from indwelling intravascular access devices (IV caths, ports) are associated with greater contamination rates than are blood cultures obtained by venipuncture. It is best practice to draw indwelling catheter site blood cultures in tandem with peripheral venipuncture blood cultures and label bottles with the specific draw site indicated.
- **Blood culture bottles should be held at room temperature and sent without delay to the laboratory within 2 hours.** Holding bottles at room temperature is *not* recommended for anything longer than 4 hours. To expedite laboratory receipt in a timely manner, health care providers are asked to direct patients to the Elliot Hospital campus or Elliot at River's Edge drawing stations for blood culture collection.
- Test Codes:  
 CBL: Culture, Blood  
 CBLA: Culture, Blood (patient on antibiotics)