

## BLOOD CULTURE COLLECTION GUIDELINES

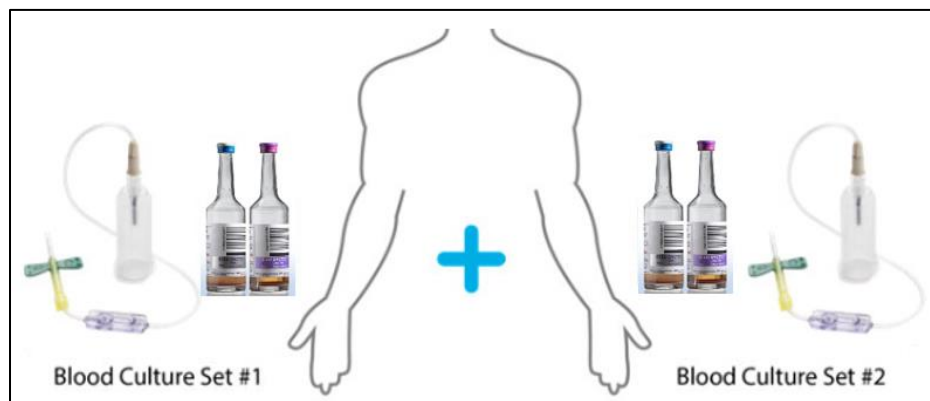
### Important terms to know:

- Blood culture set:

Refers to bottles inoculated from the same venipuncture site. Includes one aerobic and one anaerobic bottle.

- Blood culture order:

Consists of two sets of blood culture bottles from **two different** venipuncture sites.



### COLLECTION DEVICE



BD BACTEC™ Aerobic Plus  
Gray cap



BD BACTEC™ Anaerobic Lytic  
Purple cap



BD BACTEC™ Pediatric Plus  
Pink cap

#### ADULT:

Collect 2 sets of cultures from different sites; at least one set of cultures from a peripheral site

#### PEDIATRIC:

Amount of blood depends on weight of patient (see weight-based minimums below)



**Collection instructions:**

1. BACTEC bottle preparation:

- Visually inspect all bottles for contamination, cracks, or other signs of deterioration. Do not use bottles that appear turbid or damaged.
- Mark fluid volume in bottle and then mark volume of blood to be drawn using the hatch marks on bottle (each hatch is a 5-mL increment). Refer to tables below for recommended volumes.
- Wash hands with soap and water with friction for 15 seconds or use alcohol-based hand rub per policy.
- Remove flip-off caps from culture bottle. Wipe top of each vial with a single alcohol swab and allow to dry completely, usually 60 seconds.

2. Skin preparation:

- Apply gloves and tourniquet then select puncture sites.
- Do not draw blood cultures from lines unless there is absolutely no alternative site
- Remove tourniquet for skin preparation.
  - If palpation of site prior to puncture is anticipated, wear STERILE gloves; if palpation of site prior to puncture is not anticipated, wear unsterile gloves
- If skin is soiled, clean with 70% isopropyl alcohol before disinfecting. Requires exposure time of at least 30 seconds.
- Disinfect site with 2% chlorhexidine gluconate in adults and children over 2 months. Cleanse using a back-and-forth motion for 30 seconds.
- Allow it to air dry.
- Do not blow at the site after cleansing the skin.

3. Blood collection:

- Perform venipuncture per protocol.
- Use a vacutainer butterfly needle with hub to minimize chances of contamination. Make certain that the needle does not touch anything before entering the skin.
- Inoculate first the aerobic bottle and then the anaerobic bottle
- Gently invert the bottle to mix contents and avoid clotting.
- NOTE: Draw cultures before the initiation of antibiotic therapy if possible

#### 4. Bottle labelling:

- Label each bottle with patient's name and medical record number and site of draw.



Align the label with the top of the manufacturer's label on the opposite side of the bar code.

The patient's name should be read from left to right.



**Do not** cover bar code on the bottle with the label.

**Do not** place label on the neck of bottle or bottom of the bottle.

Do not cover the window with the ruled lines! (Lab needs to be able to ensure proper blood amounts are in the bottles.)

#### Specimen volumes:

Optimal blood fill volumes critically determine the diagnostic yield of blood cultures. Each mL of blood, up to 10 mL, can increase the sensitivity of the blood culture by 3-5%. While overfilling of bottles may cause false positivity, underfilling reduces the sensitivity of blood cultures.

Adults:

Recommended blood culture volume		Total volume to be drawn	BD Bactec Aerobic Plus F	BD Bactec Lytic/Anaerobic
Adult Collection or Pediatric collection > 26 kg			Blood Volume	
	Ideal Volume	20 ml	10 ml	10 ml
	Acceptable Volume	8-20 ml	4-10 ml	4-10 ml
	Difficult Collection	< 7 ml	7 ml	

Pediatric:

Patient Weight (kg)	Minimum Blood Volume to Collect (mL)	Media Type and Minimum Inoculation Volume (mL)	
		BD Bactec Peds Aerobic Plus	BD Bactec Lytic/Anaerobic
*1 kg or less	2	1	1*
* 1.1 kg – 1.5 kg	2	1	1*
1.6 kg – 3.9 kg	2	1	1
4 - 7.9 kg	4	2	2
8 - 13.9 kg	6	3	3
14 - 18.9 kg	10	5	5
		BD Bactec Peds Aerobic Plus	BD Bactec Lytic/Anaerobic
19-25.9 kg	16	8	8
More than 26 kg	20	10	10

\*Anaerobic cultures (1 ml of blood goes into the anaerobic vial and 1 ml of blood goes into the aerobic vial) should be considered for neonates  $\leq 1.5$  kg if the mother had chorioamnionitis, premature rupture of membranes, a bowel perforation, or any other injury/condition that could introduce anaerobes into the womb, or if the neonate has necrotizing enterocolitis.

### **Fungal and AFB blood cultures**

Optimal Volume for fungal and AFB cultures: 3-5 ml (minimum 1 ml, maximum 5 ml)



BD BACTEC™ Myco/F Lytic

### **Specimen transport/storage:**

For optimum recovery and best patient care, send bottles immediately to the clinical microbiology lab. If delayed transport is unavoidable, store BD BACTEC bottles at room temperature and send within 18-24 hours. Do not refrigerate or incubate above room temperature.

### **Additional remarks:**

Please notify lab if *Brucella* (Brucellosis), *Francisella* (Tularemia), or other unusual pathogen/infection is suspected.

Cultures are continuously monitored and incubated for 5 days. Cultures will be incubated for 14 days if *Brucella* or *Francisella* is suspected, and the lab notified.