

Instructions for Blood Culture Collection

Step 1 – Collection Preparation

- ❑ Obtain **BLOOD CULTURE COLLECTION KITS** – (one kit for each venipuncture) - Central Supply stocks as follows: Lawson #85109; Cerner #SP085109. Individual bottles are stocked as anaerobic bottle Lawson #70, Cerner #SP000070, and Aerobic bottle Lawson #71, Cerner #SP000071. **NOTE: Aerobic bottle contains resin beads.**
- ❑ Identify the patient by checking armband or area specific procedure.
- ❑ Explain the procedure to the patient and/or family.
- ❑ Provide patient privacy.
- ❑ 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 (table for infants and children and a table for adults).
- ❑ Wash hands with soap and water with friction for 15 seconds or use alcohol-based hand rub per policy.
- ❑ Remove protective flip-top overcap and prep the rubber septum of the blood culture bottles with an alcohol pad in a circular motion working outward from the center and allow to dry for 1 minute before inoculation.

Step 2 – Skin Preparation

- ❑ Apply gloves and goggles. Apply tourniquet and select puncture sites keeping the following in mind:
 - Draw two sets of blood cultures at the same time from two different sites. A set includes one aerobic bottle (silver label) and one anaerobic bottle (purple label). Sampling paired blood cultures from venipunctures at separate sites improves detection of contamination of the blood cultures by skin bacteria (consult with physician regarding sites and timing).
 - Only use a femoral venipuncture site as a last resort due to skin contamination by fecal bacterial flora in the area. Scrupulous skin antisepsis must be done if a femoral site is used.
 - Do not draw blood cultures from lines unless there is absolutely no alternative site. (See Step 3b if no alternative, for Intravascular Catheter draw. An order must be obtained.)
 - Draw cultures **before** the initiation of antibiotic therapy if possible.
- ❑ 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.
- ❑ Prep the puncture site with chlorhexidine (**Note: <2 months old, do not use chlorhexidine; use betadine**); DO NOT WIPE SKIN SITE AFTER CHLORHEXIDINE PREP.
 - How to apply to dry skin:
 1. Using aseptic technique, remove the applicator from its package.
 2. Holding the applicator horizontally, gently pinch the wings to release the solution into the sponge.
 3. For dry sites such as the arm, use gentle, repeated strokes on the site with the friction pad for a full 30 seconds.
 4. Scrub with a back-and-forth motion using friction. (If <2 months, apply betadine using a circular motion).
 5. **Allow to air dry. Do not blot, wipe, fan or blow dry.**
 6. Discard applicator.
 - How to apply to moist skin:
 1. Follow steps 1 and 2 for dry skin.
 2. Use gentle, repeated back-and-forth motions on the site for 2 full minutes.
 3. Completely wet the treatment area.
 4. **Allow to air dry. Do not blot, wipe, fan or blow dry.**
 5. Discard applicator.
 - Remove & discard gloves, perform hand hygiene.

Step 3a – Venipuncture and Bottle Inoculation

- ❑ Note the appropriate blood volume from the table below before beginning venipuncture:
Table 1. Blood volumes suggested for cultures from infants and children

Wt of patient		Total volume for culture	Recommended volume of blood for culture (mL) ¹				Total patient blood volume used ²
kg	lb		Culture no. 1		Culture no. 2		
			Aerobic	Anaerobic	Aerobic	Anaerobic	
≤ 1	≤ 2	2 mLs	2 mLs				4%
1.1 – 2	2.2 – 4.4	4 mLs	2 mLs		2 mLs		4%
2.1 – 12.7	4.5 – 27	6 mLs	2 mLs	2 mLs	2 mLs		3%
12.8 – 36.3	28 – 80	20 mLs	5 mLs	5 mLs	5 mLs	5 mLs	2.5%

¹It is recommended to collect more than one culture (set) to increase sensitivity.

²References indicate up to 4-4.5% of total blood volume can be safely obtained for **ALL** laboratory testing on blood in a 24-hour period.

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Table 2. Blood volumes suggested for cultures from adults.

	Total volume	Aerobic bottle	Anaerobic bottle
Adult patients	20 mLs	10 mLs	10 mLs
<i>Low volume draws – ADULTS</i>	> 4 mL in adults	All in Aerobic bottle	NONE

- Connect a Vacutainer holder to the luer connector of the **Safety-Lok™ Blood Culture Collection Set**.
- Apply tourniquet.
- Put on new gloves (note: if you plan to re-palpate venipuncture site, you must put on sterile gloves)
- Perform venipuncture. When the needle is in the vein, secure it with tape or hold in place.
- Place **Vacutainer holder** first on the **Aerobic (silver label/blue band on top) bottle** and press down to penetrate the bottle septum & obtain blood flow. **NOTE: Aerobic bottle contains resin beads.**
- Fill blood culture bottles, using the previously-marked fill indicator lines (in 5-mL increments) on the bottle.
- Move the **Vacutainer holder** to the **Anaerobic (purple label/pink band on top) bottle** and continue as above.
- Gently rotate (do not vigorously shake) the bottles to mix the blood and broth.
- DO NOT OVERFILL BOTTLES.** Do not add more than 10 mLs of blood to a bottle.
- In order to obtain blood cultures from additional sites, repeat above outlined steps.
- Label each bottle of each set with patient identification/collection labels generated on the unit. Note date, time, and your initials on label. Indicate source (peripheral or catheter) if different from source on label. **DO NOT place the stickers on the bottom of the blood culture bottles or over the bottle barcode!**

Step 3b – Intravascular Catheters Draw and Bottle Inoculation

- Do not draw blood cultures from lines unless there is absolutely no alternative site. If no alternative, use the procedure below.
An order must be obtained.
- Sample collection for blood cultures does not require a discard amount before collection, but other laboratory tests require a discard amount. It is advised to collect cultures before collecting blood for other laboratory test. Thereby, the blood culture collection will serve as the discard amount.**
 - Using two separate alcohol preps, scrub catheter hub connection for 15 seconds with 70% alcohol. Air-dry.
 - While wearing gloves, attach syringe or Blood Culture Adapter Cap to hub.
 - Collect blood for culture through the hub.
 - Fill the **Aerobic (silver label) bottle**, using the previously-marked fill indicator lines (in 5-mL increments) on the bottle.
 - Fill the **Anaerobic (purple label) bottle**, using the previously-marked fill indicator lines (in 5 mL increments) on the bottle.
 - Using the fill indicator lines (in 5ml increments) on the bottle, obtain the specified amount using the table above.
 - Gently rotate (do not vigorously shake) the bottles to mix the blood and broth.
 - **DO NOT OVERFILL BOTTLES.** Do not add more than 10 mLs of blood to a bottle.
 - Label each bottle of each set with patient identification/collection labels generated on the unit. Note date, time, and your initials on label. Indicate source (peripheral or catheter) if different from source on label. **DO NOT place the stickers on the bottom of the blood culture bottles or over the bottle barcode!**