

BLOOD CULTURE: SKIN PREPARATION AND SPECIMEN COLLECTION



Objective

- ▶ To understand and demonstrate the proper skin preparation and specimen collection of blood culture order performed by trained health care providers responsible for the collection and handling of blood specimens.

What is a Blood Culture test?

- ▶ A blood culture test is used to detect the presence of bacteria or fungi in the blood, to detect the type present, and to guide treatment. Testing is used to identify a blood infection (septicemia) that can lead to sepsis, a serious and life-threatening complication.

Timing of Collection

- Most cases of bacteremia are detected by obtaining three sets of separately collected blood cultures. More than three sets of blood cultures yield little additional information.
- A set of blood cultures consist of an aerobic (blue cap) and anaerobic (purple cap) blood culture bottles.
- Blood culture should be drawn prior to the start of antibiotics.
- Blood cultures must be drawn at the time specified by the ordering provider.
- Always collect Blood Culture bottle first to avoid contamination.



Timing of Collection

- When more than one set is ordered at the same time, the second set should be obtained from a separate and prepared venipuncture site on the opposite arm, **within 30 minutes after the first set is collected.**

Note: In medical and critical urgent situations in which antimicrobial therapy is to be started immediately, two or three separate blood culture specimens can be collected from different sites within a few minutes apart.

- There should be no more than three sets of blood cultures drawn within a 24 hour period.
- If a patient has IV on one arm, obtain the specimen from the other arm without the IV.

Specimen Requirements

➤ PATIENTS >60 DAYS OLD

- Chloraprep must **ONLY** be used to disinfect the skin for patients >60 days old.
- 1 set is consist of 2 blood culture bottles, one aerobic (blue) and one anaerobic (purple).
- Total Volume required: **8-10 mL** of blood culture bottle from each venipuncture site.

Note: Adult adequate fill volume in the diagnosis of sepsis.

➤ BABIES (under 2 months old)

- Use Povidone-Iodine prep only. Do not use Chloraprep.
- Minimum Volume Required: 1 mL in aerobic bottle. Recommended fill is 2 -4 mL.
- *When < 1.0 mL is collected, the priority is to inoculate the aerobic (blue) blood culture bottle.*

Materials

- ▶ *Gloves*
- ▶ *Tourniquets*
- ▶ *Antiseptics for skin prep (Chloraprep, Povidone-Iodine prep)*
- ▶ *Alcohol pad*
- ▶ *BacT/ALERT Blood culture media (Aerobic and Anaerobic)*
- ▶ *Winged (Butterfly) Collection set*
- ▶ *Saf-T Holder Blood Culture Device with Male/Female Luer Adaptor for use with butterfly or syringe, respectively*
- ▶ *Sterile disposable syringes*
- ▶ *Sharps Container*
- ▶ *Bandage/tape*
- ▶ *Gauze pad*
- ▶ *Blood collecting trays/cart*

Skin Preparation and Specimen Collection

1. Organize equipment for optimum efficiency. Observe universal precautions.
2. Wash hands with soap and water or use a hand gel.
3. Cleanse the tops of the blood culture bottles with alcohol pad.
4. Tie tourniquet on the arm and locate the vein.
5. Release tourniquet and cleanse the area as follows:

Skin Preparation and Specimen Collection: Adults

A. Patients >60 days old: Use Chloraprep **ONLY** to disinfect the skin.

1. Pinch the wing on the applicator to break the ampule and release the antiseptic. Do not touch the sponge.
2. Wet the sponge by repeatedly pressing and releasing the sponge against the treatment area until liquid is visible on the skin.
3. Use repeated back and forth strokes of the applicator for approximately 30 seconds. Completely wet the treatment area with antiseptic.
4. Allow the area to air dry for approximately 30 seconds. Do not blot or wipe away.

Skin Preparation and Specimen Collection: Babies

B. BABIES (Patients under 2 months old): Use Povidone-Iodine prep **ONLY**. Do not use Chloraprep.

1. Clean using a circular motion, beginning in the center and extending outward from the intended venipuncture site.
2. Do not go back and forth over the area that has already been cleaned.
3. Allow the area to air dry – do not blow on or wave your hand over it to dry.
4. Do not touch the area after it is dry unless the gloved finger has been disinfected with povidone-iodine also.

Skin Preparation and Specimen Collection

6. Reapply tourniquet taking care not to touch cleansed area.
7. Using a sterile syringe or blood culture adapter, draw 20 mL of blood for each blood culture order, inoculating 10mL of each into an aerobic and anaerobic bottle. **Minimum sample is 1 mL in a aerobic bottle. Do not overfill the bottle to avoid false positive readings.**
8. Release tourniquet and apply pressure to the venipuncture site.
9. Inoculate the BacT/Alert bottles taking care not to inject air into the bottles. If multiple tests are ordered long with the blood culture, **be sure to inoculate the Bact Alert bottles first and then the vacutainer tubes to prevent contamination.**
10. Mix, then the label the bottles in the presence of the patient.

Questions:

- ▶ Refer to Labnet
- ▶ Contact the Laboratory Department for assistance