

WVUH Laboratories
updated 7 April 2016

BLOOD CULTURE COLLECTION

- Blood specimens should only be drawn from venipuncture sites, NOT from catheters. The sole exception is for suspected catheter related bacteremia.
- If catheter related bacteremia is suspected, a “time to positivity” blood culture is indicated. Here, paired blood cultures drawn within 30 minutes of each other are obtained through an indwelling catheter and a peripheral venipuncture site. The exact draw time and site for each must be documented on specimen label.
- Two sets of blood cultures should be routinely drawn at each request. Each set should be drawn from different locations (i.e., two venipunctures).

Blood Culture Collection Procedure

1. Rub chlorohexidine prep back and forth over intended venipuncture site and CLEAN THOROUGHLY by using gentle friction. Skin contains bacteria that must be removed or it will be transferred into the blood bottle resulting in a contaminated culture.
2. Allow to air dry.
3. Remove the metal rim from bottles, wipe with alcohol before transferring blood. Transfer the proper amount of blood through the rubber stopper.
4. Draw amount of blood needed:
 - For adults: collect **16-20 mL** of blood per set (2 bottles per set) including:
 - a) **1 BacT/ALERT Aerobic (FA Plus green cap), 8-10 mL per bottle.**
 - b) **1 BacT/ALERT Anaerobic (FN Plus, orange cap), 8-10 mL per bottle**
 - c) If only able to collect **5-8mL total**, please use ONE aerobic bottle (i.e. skip Anerobic bottle inoculation)
 - For pediatrics or very low blood volume adult patients: 3-4 mL per bottle (1 bottle per set)
 - a) **1 Peds BacT/ALERT (Peds Plus, yellow cap), 3-4 mL per bottle**
 - SEE **APPENDIX A** for bottle types

- **BLOOD VOLUME IS CRITICAL.** In adults, 20 ml of blood per culture set should be collected (40mL total) for adequate sensitivity in detecting true positive cases of bacteremia. When only a small volume of blood can be obtained, use a single aerobic bottle (5-8mL) or a single pediatric bottle (< 4mL).
5. Label each bottle with patient identification and site drawn. **DO NOT COVER BAR CODE LABEL ON BOTTLE.**
 6. Return bottles in a specimen bag to the Microbiology Laboratory. No more than 2 sets of blood cultures will be accepted routinely per 24 hours (except in suspected endocarditis). Please contact microbiology lab (7-4234) for any patient in whom >2 blood cultures sets/day is indicated.

All other questions should be directed to the Microbiology lab, extension 7-4234.

ISOLATOR TUBE COLLECTION INSTRUCTIONS

Used for

- **AFB blood cultures LAB1711 (adult) and LAB1709 (pediatric)**
- **Mold blood culture LAB1712 (adult) and LAB1710 (pediatric)**

Adult – 10 ml ISOLATOR TUBES available in Materials Distribution

**Pediatrics – 1.5 ml ISOLATOR TUBES available in the Microbiology Laboratory – Call 74234 to request tubes
SEE APPENDIX A**

Successful detection of septicemias begins with proper technique during phlebotomy. Airborne organisms or those present on the patient's skin or phlebotomist's hands can contaminate the sample making it difficult for the physician to determine if the organism is a contaminant or if it is involved in the disease process. The phlebotomist must maintain sterility of needles and disinfect everything that comes in contact with the patient and sample.

1. **ALWAYS COLLECT THE ISOLATOR TUBE FIRST**
To minimize the risk of contaminating the specimen, collect the ISOLATOR tube before other samples.
2. **DISINFECT THE STOPPER.**
 - Use 10% PVP iodine solution.
 - **DO NOT** allow PVP iodine to pool on stopper. Iodine could enter tubes and kill organisms in the sample.
 - Allow to dry completely...about 1 minute.
3. **ASSEMBLE ISOLATOR TUBE ONTO HOLDER.**
 - Assemble needle and holder.
 - Insert stopper of ISOLATOR tube onto needle holder.
 - Advance tube straight onto needle, but no further than guideline on holder.

4. CLEANSE AND DISINFECT THE ARM.
 - Select venipuncture site.
 - Cleanse with 70% alcohol.
 - Allow to dry...about 1 minute.

5. USE PVP IODINE TO PREPARE THE VENIPUNCTURE SITE.
 - Apply in concentric circles working from the inside out.
 - Allow to dry 1-2 minutes to thoroughly disinfect.
 - DO NOT BLOW ON THE ARM!

This will contaminate the venipuncture site.

6. MAINTAIN ASEPTIC TECHNIQUE.

If further palpitation is required: finger should be disinfected OR sterile gloves should be worn.
Venipuncture site should be disinfected again.

7. COLLECT BLOOD WITH PATIENT'S ARM IN A DOWNWARD POSITION.
 - Hold tube/needle assembly so that tube bottom is lower than needle.
 - Push tube to the end of the tube holder.
 - Blood will flow into tube.
 - DRAW A FULL TUBE.
 - Allow tube to fill completely.
 - Flow will stop when tube is full.

Short samples decrease the chance of isolating already low numbers of organisms.

8. INVERT THE TUBE IMMEDIATELY AFTER COLLECTION.
 - Gently invert the tube 4-5 times to mix blood with contents of ISOLATOR tube.
 - Incomplete mixing causes small clots to form causing tube to be rejected by laboratory.
 - Clotted samples must be redrawn.

9. LABEL THE ISOLATOR TUBE.
 - Include patient name, ID #, and time blood was drawn.
 - Time is important to the lab and physician when a patient is on antibiotic therapy.
 - Use label provided on ISOLATOR tube.

Separate labels are not recommended because an increase in diameter of tubes can cause breakage during centrifugation.

➤ AFTER THE SPECIMEN IS COLLECTED, TRANSPORT IT IMMEDIATELY TO THE LABORATORY FOR PROCESSING

➤ DO NOT REFRIGERATE OR INCUBATE THE SPECIMEN:
THE RECOVERY OF ORGANISMS MAY BE DRAMATICALLY DECREASED

All other questions should be directed to the Microbiology lab, extension 7-4234

BLOOD CULTURE MEDIA – Visual Aid

Standard (BacT/ALERT) Blood Culture Bottles



Used for

- Routine adult blood culture (LAB304747)
- Peds routine blood culture (LAB304749)
- Neonatal blood culture (LAB1231)
- Blood culture, determine line sepsis (LAB304871)
- Endocarditis blood culture (LAB304796)

Isolator Blood Culture Collection Tubes

Adult



Peds



Used for

- Adult AFB blood culture (LAB1711)
- Pediatric AFB blood culture (LAB1709)
- Adult mold blood culture (LAB1712)
- Pediatric mold blood culture (LAB1710)