Wake Forest®
Baptist Medical Center

New BD BACTEC Blood Culture System

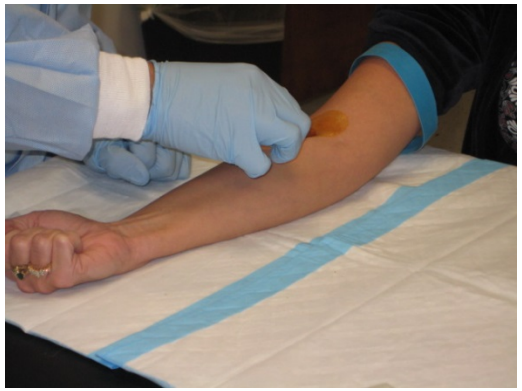
Wake Forest Baptist Medical Center

Microbiology Laboratory (6-2658)

Skin Preparation
This an important step to avoid contamination

- Select vein for venipuncture site
- Use a **ChloraPrep** (Medi-Flex Hospital Products, Inc.) kit following the instructions recommended by manufacturer
  - -Use repeated back and forth strokes of the applicator for 30 seconds to thoroughly clean the site. Allow to dry for 30 seconds.

- Alternatively, **70% isopropyl alcohol** followed by iodine
  - -Scrub with 70% alcohol for minimum 30 seconds
  - -Apply iodine solution in concentric circles away from puncture site (1 ½ – 2 inches)
    - 1-2% tincture of iodine for 30 seconds
    - 10% povidone-iodine for 60 seconds



Note 1. Chlorhexidine-gluconate is recommended for infants two months and older and patients with iodine sensitivity.

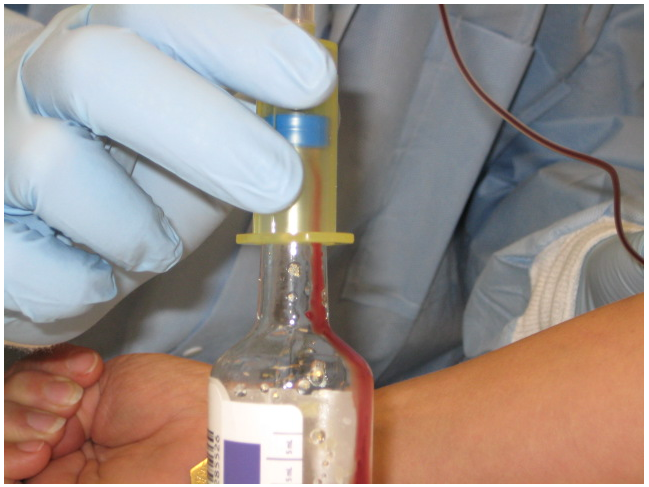
Note 2. If povidone-iodine is used, site should be cleansed after phlebotomy is performed.

Prepare BACTEC Bottles

- Visually inspect all bottles for contamination, cracks, or other signs of deterioration
- Do not use bottles that appear turbid or damaged
- Using media meniscus as a guide, mark culture bottle label(s) at desired fill level
  - Each hatch mark on label is approximately 5mL
- Remove flip-off caps from culture bottle(s).
- Wipe top of each vial with a single alcohol swab and allow to dry completely, usually 60 seconds

DO NOT USE IODINE TO DISINFECT BOTTLE

Blood Collection



- Perform venipuncture by holding wings of butterfly device.
- DO NOT hold by grasping yellow safety shield.
- Select aerobic vial first (blue ring).
- **Maintain vial in an upright position.**
- Push and hold Vacutainer™ holder over top of vial to puncture septum.
- Hold in place on vial and collect blood to desired fill level.
- Monitor to ensure proper flow and fill level.

Blood Collection

- Once desired fill level is achieved, remove holder from vial.
- Immediately transfer holder to second vial and push needle into vial.
- Hold in place on vial and collect blood to desired fill level.
- Remove holder from vial.

- When final blood culture vial is filled, place gauze pad over insertion site, and gently remove needle from vein.
- Apply mild pressure to gauze to stem blood flow.
- Check to ensure that bleeding has ceased, and apply an adhesive or gauze bandage over venipuncture site.

Blood Culture: Bacterial Culture
Versatrek versus BD BACTEC System

Versatrek (Previous) System

Purple: aerobic
Red: anaerobic

Recommended volume
<u>Up to 5 cc</u> (mL) of blood per bottle

BD BACTEC (NEW) System

Gray cap/ blue ring: Aerobic
Purple cap/maroon ring: Anaerobic
Pink cap/ silver ring: Pediatric bottle

Recommended volume
8-10 cc (mL) of blood per bottle (aerobic and anaerobic)
1 to 5 cc (mL) per Ped bottle in children ≤ 5 years of age.
Minimum of 0.5 cc (mL) in Neonates to < 1year old

In adults always send 2 bottles (one aerobic and one anaerobic) and if one set (2 bottles) is drawn through a port in an indwelling catheter, a peripheral set (2 additional bottles) <u>MUST</u> be submitted

Blood Culture: Fungal and AFB Culture

Isolator (old) versus BACTEC Myco (new) System

Isolator (previous) System

- 10ml per tube adult
- 2 ml pediatric
- Minimum volume required:
  5 ml adult; 1 ml pediatric

BACTEC Myco/F Lytic (NEW System)

White Cap/Red Ring

Optimal Volume: 3-5 mL

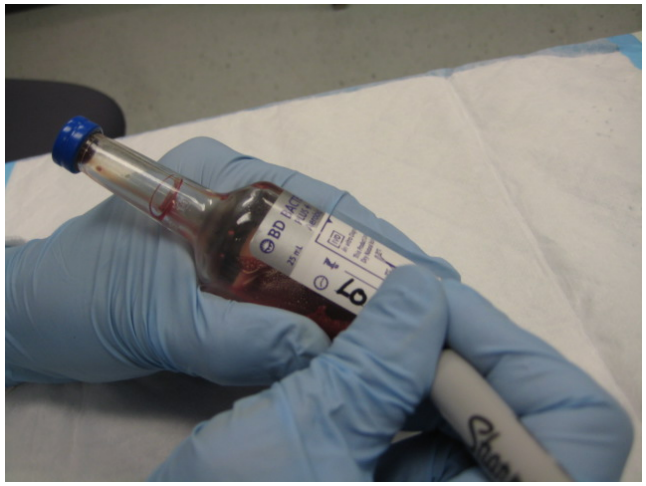
Minimum volume in pediatric patients: 1ml

Recommended Fill Volumes for Needle and Syringe Draw

- **Children ≤ 5 years old:** 1 ml per year of age (1 to 5 mL of blood per venipuncture).
  - Transfer the entire amount to a BACTEC™ PEDS PLUS/F vial. (Pink Cap)
- **Adult:** 16 to 20 mL of blood per venipuncture (8-10 mL per bottle).
  - If it is impossible to draw the required amount, aliquot as follows:

Venipuncture	Amount in BACTEC Plus Aerobic Vial (Grey Cap/Blue Ring)	Amount in BACTEC Lytic/10 Anaerobic Vial (Purple Cap/Maroon Ring)
16 – 20 mL	Split equally between aerobic and anaerobic vials	
13 – 16 mL	8 mL	5 – 8 mL
10 – 12 mL	5 – 7 mL	5 mL
	Lower volumes are not recommended	

Label Vials



- Label all vials with patient name, collection date and time.
- DO NOT write on or place any labels over BACTEC bottle barcode, as this is required by instrument to process specimen.

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Transport of Bottles

- Send bottles **promptly** to the microbiology laboratory for processing.
- Do not refrigerate the bottles after inoculation.
- Make sure that **one set** of bottles (one aerobic and one anaerobic) have been collected per patient.
- Check that the requisition slip is complete and accurate. One requisition slip is needed per set.
- Take the bottles to the Microbiology Laboratory or send them through pneumatic tube according to instructions.

To send blood culture bottles through the pneumatic tube, **you MUST:**

- Use a red, biohazard carrier with both halves on the egg crate insert, designed for this carrier. (NCBH store room # 35-998703). **No** other insert should be used.
- **EACH** blood culture bottle should be placed in a **separate** biohazard, zip lock bag.
- Only **two** blood culture bottles should be placed in a carrier with **NO** other specimens.
- The blood culture bottles are to be placed in a carrier **with the bottoms toward each other** (flat bottom to flat bottom)
- Carriers should be securely fastened