

# "Blood Culture Collection Procedure"

*"The volume of blood drawn for culture is the most important variable in detecting bacteremia or fungemia."*

CLSI M47-A. 27(17)<sup>1</sup>

*"The presence of living microorganisms circulating in the bloodstream of a patient has substantial diagnostics and prognostics importance."*

Weinstein, et al. 1997. Clin Infect Dis. 24:584-602<sup>2</sup>

*"Blood cultures should not be repeated for two to five days, because the blood does not become sterile immediately following the start of antimicrobial therapy."*

CLSI M47-A. 27(17)<sup>1</sup>

*"Blood culture bottles should never be refrigerated or frozen after inoculation"*

CLSI M47-A. 27(17)<sup>1</sup>

## 1. SKIN DISINFECTION

Disinfection is needed at venipuncture site in order to minimize the risk of contamination with skin flora. Time required to disinfect surfaces<sup>1</sup>:

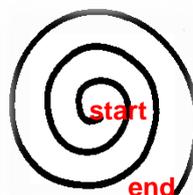
- Iodine-containing preparations: 30 seconds for tincture of iodine; 1.5 to 2 minutes for iodophors
- Chlorhexidine gluconate: 30 seconds

**Chorhexidine gluconate is recommended**

**No allergic reactions**

**Need not clean off after venipuncture**

*BUT it cannot be used to disinfect skin of infants < 2 months!!*



Direction of disinfectant at venipuncture site

70% isopropyl alcohol  
- allow to air-dry

2% chlorhexidine gluconate  
- 30 seconds to dry

## 2. BACTEC™ BLOOD CULTURE VIALS PREPARATION

*Blood culture medium for quick, precise diagnosis of sepsis...*



- ✓ Check expiry date
- ✓ Inspect vial for cracks, contamination, cloudiness or bulging
- ✓ Mark vial label at desired fill level
- ✓ Remove flip-off cap from vial
- ✓ Wipe top of vial with 70% alcohol swab (iodine is **NOT** recommended) and allow to dry

**Never draw single blood cultures from Adult patients<sup>1</sup>**

- \* **Inadequate blood volume for cultures**
- \* **Difficult to interpret results!!**

### 3. BLOOD COLLECTION

- \* Blood cultures collection should be done using standard precautions. Draw blood for culture from veins, **NOT** arteries or intravascular access devices (i.e. intravenous catheters and ports).<sup>4,5,6</sup>
- \* For patients suspected with *Catheter-Related Bloodstream Infections (CRBSIs)*, blood may need to be obtained from intravenous lines and similar access devices, a culture of blood from such a device should be paired with another culture of blood obtained by venipuncture to assist in interpretation in the event of a positive result.<sup>1</sup>



#### BD Vacutainer Safety-Lok Blood Collection Set

- Hold vial upright and collect blood to desired fill level (10mL/vial).
- Order of draw:  
Aerobic → Anaerobic



#### Needle & Syringe

- Collect 10-20 mL blood in syringe.
- Distribute blood equally into vials (10mL/vial).
- Order of draw:  
Anaerobic → Aerobic

**Draw blood from separate, peripheral venipuncture site!!**

### 4. PATIENT SKIN CARE

Place gauze pad over the venipuncture site and apply mild pressure to cease bleeding. Apply an adhesive or gauze bandage over the site.

### 5. DISPOSAL

Dispose blood collection devices into sharp bins according to regulations. Wash hands after completion of work.



### 6. VIAL LABELLING

Label all vials. **DO NOT** write on or place any labels over the BACTEC vial barcode, as this is used by the instrument to process the specimen.

### 7. INCUBATION

The inoculated BACTEC vials should be placed in BACTEC instrument as soon as possible.

### REFERENCES

1. CLSI. *Principles and procedures for blood cultures; Approved Guideline*. CLSI document M47-A. Wayne, PA: Clinical and Laboratory Standards Institute. 2007.
2. Weinstein MP, Towns ML, Quartey SM, et al. The clinical significance of positive blood cultures in the 1990s: a prospective comprehensive evaluation of the microbiology, epidemiology, and outcome of bacteremia and fungemia in adults. *Clin Infect Dis*. 1997;24:584-602.
3. Spitalnic SJ, Wollard RH, Mermel LA. The significance of changing needles when inoculating blood cultures: a meta-analysis. *Clin Infect Dis*. 1995;21:1003-1006.
4. Aronson MD, Bor DH. Blood cultures. *Ann Intern Med*. 1987;106:246-253.
5. Weinstein MP. Current blood culture methods and systems: clinical concepts, technology, and interpretation of results. *Clin Infect Dis*. 1996;23:40-46.
6. Reller LB, Murray PR, MacLowry JD. Cumitech 1A, *Blood Cultures II*. Washington JA. II, coordinating ed. Washington DC: American Society for Microbiology; 1982.



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