

## Vanderbilt University Medical Center Guidelines for Providers on the Ordering and Collection of Blood Cultures

- I. General Principles re: Bacteremia/Fungemia
  - a. Blood cultures are indicated only when bacteremia or fungemia is suspected clinically.
  - b. If bacteremia or fungemia is suspected, **2** sets of blood cultures should be drawn from **separate venipuncture** sites in adults (1 to 2 sets for children).
  - c. Collection from any “**plastic source device**” (e.g. central venous catheter, PICC, port-a-cath, dialysis line) is **strongly** discouraged unless catheter-related infection suspected.
  - d. Blood cultures **should not be drawn** from a peripheral IV.
  - e. As standard blood cultures will readily detect fungemia due to *Candida* species, fungal blood cultures should only be ordered when non-*Candida* infections are suspected.
- II. Catheter-Related Infections (e.g. including Central Venous Catheters, PICC lines, implanted port, hemodialysis catheter)
  - a. In the event that a catheter-related bloodstream infection is suspected, evidence-based guidelines<sup>1</sup> indicate that **one** set of blood cultures should be obtained from the **catheter** and **one** set via **venipuncture**.
  - b. **Collection via a catheter must be specifically ordered by a provider.** If a peripheral venipuncture is not possible, two separate cultures obtained from the catheter should be collected 15 minutes apart.
  - c. To document the clearance of a catheter-related infection, providers should wait to order blood cultures until the **day after removal** of the infected catheter (due to the risk of detection of transient bacteremia related to catheter removal).
- III. Endovascular Infections (e.g. endocarditis, vascular graft infection)
  - a. For suspected endovascular infection, an additional (e.g. 3<sup>rd</sup> set in adults, 2<sup>nd</sup> or 3<sup>rd</sup> set in children) separately-drawn set via **venipuncture** should be collected.
  - b. To document clearance of an endovascular infection, catheter-related infection, or general bacteremia/fungemia (if indicated) clinicians should allow existing blood culture specimens time to turn positive before ordering another set. Blood cultures should be **ordered no more frequently than every other day.**
- IV. Standing/Surveillance Orders for Blood Cultures
  - a. Collection of blood cultures for routine **surveillance** in the absence of any clinical signs or symptoms (e.g. as a part of routine preoperative testing) is **strongly discouraged.**
  - b. Routine standing or “as needed” orders for blood cultures are **strongly discouraged** (e.g. daily cultures to document clearance of bacteremia or blood cultures x 2 for temp > 101°F).
  - c. In the absence of a suspected endovascular infection, **collection of more than 2 sets of blood cultures in a 24 hour period is strongly discouraged.**
- V. Exceptions
  - a. If venipuncture collection is unsuccessful after multiple attempts, collection through a **plastic source device** will be **allowed only with modification** of the original blood culture order from a physician.

*For further details re: blood culture collection, refer to VUMC policy CL – 30-08.05 Blood Culture Collection*

1. Mermel LA, Allon M, Bouza E, et al. *Clinical practice guidelines for the diagnosis and management of intravascular catheter-related infection: 2009 Update by the Infectious Diseases Society of America. Clin Infect Dis* 2009;49(1):1-45