

Department Laboratory/Nursing  
**Laboratory Laboratory System**  
 Site(s) All Sites  
 Section Collection  
 Document # S:2105 COLL V15

**Subject BLOOD COLLECTION FOR CULTURES (BACTERIAL, FUNGAL, VIRAL)**

**Purpose** Ensure blood collected for cultures is free from contamination (from patient or personnel), precautions are taken for skin preparation as well as collection tube preparation.

**Policy** This procedure is for the additional collection of Blood Cultures. Follow the Blood Collection by Venipuncture, Vascular Access Devices (VAD), and Patient Identification and Laboratory Specimen Labeling procedures for all other steps.

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**Equipment/Supplies/Reagents** 1. Prepare for Collection  
 Complete initial steps for venipuncture or VAD collection, including identify patient, identify site/lumen, put on gloves, assemble supplies, etc.

**CAUTION: Always use gloves and observe Standard Precautions when collecting biologic specimens.**

2. Additional Supplies
- a. Chlorhexidine gluconate scrub (ChloraPrep®) **or**
  - b. Povidone-Iodine swabstix (required if patient less than 2 months of age)
  - c. Culture bottles or tubes
  - d. Alcohol prep pads
  - e. Large size access or transfer device

**Procedure** 3. Select Appropriate Culture Bottle/Tube

| <b>BACTERIAL</b>  |  | <b>Opt (mL)</b> | <b>Min (mL)</b> |
|---|--|-----------------|-----------------|
| Adult<br>Do <u>not</u> substitute peds bottle for adult minimum collection                | • BacT/ALERT Aerobic w/ activated charcoal(green cap) bottle   | 8-10            | 5               |
|   | • If indicated, BacT/ALERT Anaerobic w/ activated charcoal (orange cap) bottle   | 8-10            | 5               |
| Pediatric (<18 y)   | • BacT/ALERT Pediatric w/ activated charcoal (yellow cap)(first priority) bottle (aerobic culture)                             | 2-4             | 1               |
|   | • If indicated, BacT/ALERT Anaerobic w/ activated charcoal (orange cap) bottle   | 8-10            | 5               |
| <b>AFB (Mycobacteria)</b>   |  |                 |                 |
| Adult or Pediatric  | • SPS (liquoid yellow) tube  | 3-5             | 1               |
| <b>YEAST</b>  |  |                 |                 |
| Adult- Routine Yeast<br>Do <u>not</u> substitute peds bottle for adult minimum collection | • BacT/ALERT Aerobic w/ activated charcoal(green cap) bottle (Routine aerobic bottle is acceptable; 2nd bottle not needed)     | 8-10            | 5               |
| Pediatric- (<18 y) Routine Yeast  | • BacT/ALERT Pediatric w/ activated charcoal (yellow cap) bottle (Routine aerobic bottle is acceptable; 2nd bottle not needed) | 2-4             | 1               |

| <b>FUNGAL</b>   |  | <b>Opt (mL)</b> | <b>Min (mL)</b> |
|---|--|-----------------|-----------------|
| Adult or Pediatric Fungal, Histoplasma, Blastomyces, Coccidioides, Crypto or HIV Patients | <ul style="list-style-type: none"> <li>Isolator™ (yellow/black) tube or</li> <li>If less than 6 mL is available, collect SPS (liquoid yellow) tube.</li> </ul> | 7.5-10<br>3.3   | 6<br>1          |
| Infants (<11 lb or 5 kg) Malassezia/Histo/HIV   | <ul style="list-style-type: none"> <li>SPS (liquoid yellow) tube</li> </ul>  | 1.5             | 1               |
| <b>VIRAL</b>  |  |                 |                 |
| Adult or Pediatric  | <ul style="list-style-type: none"> <li>EDTA (purple) tube</li> </ul>   | 5               | 1               |

4. Prepare Culture Bottle/Tube

a. Bacterial & Routine Yeast Mycobacterial Culture

- Assure bottom of bottle indicator has not turned yellow
- Remove protective cap from bottles and cleanse with alcohol prep pad and allow to air dry.

b. Viral or Fungal (Histoplasma, Blastomyces, Coccidioides, Crypto or HIV Patients) Culture

- Cleanse top of tube with alcohol prep pad and allow to dry.

5. Apply Tourniquet

Apply tourniquet to locate vein. Release tourniquet.

6. Cleanse the Site

- Cleanse vein site to destroy microorganisms on the skin and prevent microbial contamination of specimen. Failure to carefully disinfect the venipuncture site can introduce skin surface bacteria into the blood culture bottles and interfere with interpretation of results.
- The following do **NOT** require a ChloroPrep or Povidone-Iodine triple prep:
  - Viral cultures (use routine alcohol prep)
  - Blood culture specimens from vascular access devices
- If the patient is less than 2 months of age, triple prep vein site with Povidone-Iodine swabsticks.
  - Scrub site for 60 seconds with Povidone-Iodine swabstick in concentric outward-moving circles.
  - Repeat application with 1-2 additional Povidone-Iodine swabsticks.
  - Povidone-Iodine may be removed with alcohol pad if color interferes with vein location.
  - If the puncture site must be touched prior to venipuncture, cleansing steps should be repeated. A gloved finger used to palpate just above the puncture site should first be cleansed in same manner as site.
- For all patients more than 2 months of age, prep the site with ChloroPrep.
  - Pinch the wings on the applicator **once** to break the ampule to release the antiseptic. Do not touch the pad.
  - Gently press the sponge against the selected site until liquid is visible on the skin.
  - Apply the ChloroPrep with side to side strokes and scrub for at least 30 seconds.
  - Allow to air dry for 30 seconds. Do not blot or wipe away.
  - If the puncture site must be touched prior to venipuncture, cleansing steps should be repeated. A gloved finger used to palpate just above the puncture site should first be cleansed in same manner as site.

7. Re-Apply the Tourniquet

Reapply tourniquet being careful not to contaminate site.

8. Perform the Collection

Perform venipuncture or vascular access device collection using one of the following methods:

- a. Evacuated system, collecting blood directly into culture bottle(s) or tube(s). **Mark approximate optimal fill volume on side of bottle prior to collection to assure correct collection volume. Do not over fill.**
- b. Syringe system, **transferring blood by attaching syringe to large size transfer device. Insert blood culture bottle(s)/tube(s) and allow vacuum to fill to optimal volume. Do not overflow.**

9. Fill the Bottles/Tube

**Assure that air is not transferred into the anaerobic bottle:**

- **Avoid air bubbles from a syringe during sample transfer to bottle.**
- **Avoid air from butterfly tubing/holder by filling the aerobic bottle before the anaerobic bottle.**

10. Label the Bottles/Tube

- a. Label bottles/tube appropriately.
- b. Identify each specimen container with appropriate body site.
- c. If collected from a vascular access device, specify the specific catheter site on the specimen container.

11. Multiple Collection Sets

At least two sets are optimal. When more than one set is ordered for collection at the same time, the second set should be obtained from a separately prepared site on the opposite arm. However, in cases where the "second site" blood culture cannot be obtained from the opposite arm, cleanse and collect two different sites on the same arm/hand, using a different vein if possible. The second collection is to substantiate the credibility of any positive and aid in interpretation of the results by showing that two different collections gave the same result.

CLSI states that the timing of the collection may be performed simultaneously (or over a short time frame) unless indicated by the physician. Collection of blood at intervals is only indicated when it is necessary to document continuous bacteremia in patients with suspected infective endocarditis or other endovascular (e.g. catheter-related) infections. The physician may request that the collections be spaced at 5-10 minute intervals.

12. Storage and Transport

**Keep bottles at room temperature and protected from direct sun light. Avoid disinfectants incompatible with polycarbonate surfaces to prevent bottle deterioration.**

- References
1. McCall RE, Tankersley CM. Phlebotomy Essentials, 4th edition. Lippincott Williams and Wilkins, 530 Walnut Street, Philadelphia, PA 19106. 2008.
  2. Strasinger SK, Di Lorenzo MA. The Phlebotomy Workbook, 2<sup>nd</sup> edition. FA Davis Company, 1915 Arch Street, Philadelphia, PA 19103. 2003.

3. ChloroPrep® One-step Training Manual. Medi-Flex Hospital Products, Inc. 8717 W. 110<sup>th</sup> Street, Overland Park, KS 66210-1129. 9/01.
4. CLSI: Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture; Approved Standard-6<sup>th</sup> edition. CLSI document H3-A6, Wayne, PA, Clinical and Laboratory Standards Institute; 2007.
5. CLSI. Principles and Procedures for Blood Cultures; Approved Guideline. CLSI document M47-A. Wayne, PA : Clinical Laboratory Standards Institute; 2007.
6. BacT/ALERT® FA and BacT/ALERT® FN package insert, BioMérieux,Inc. 2010.

Associated Documents

Work Aid – [BacT Blood Culture Bottle Conversion 2012 Adult specific](#)  
 Work Aid – [BacT Blood Culture Bottle Conversion 2012 Pediatric specific](#)

File Location

Sharedir\Sys Labs Policies and Procedures\Phlebotomy S2105\_Blood Collection for Cultures

| Document History                                     |                                 |
|--|---------------------------------|
| Original Author(s): M Weber                          | Date(s): 12/83                  |
| Last Reviewed By: K Garin                            | Date(s): 3/10, 3/11, 8/12       |
| Last Revised and Reviewed by: K Garin, N Young-Dixon | Date(s): 3/09; 3/10, 3/11, 8/12 |

| Document Signatures   |   |
|---|---|
| <input type="checkbox"/> New Document Approval  | <input type="checkbox"/> Retired Document Approval                      |
| <input type="checkbox"/> Routine Review Document Approval   | <input type="checkbox"/> Change in Medical/Laboratory Director Approval |
| X Revised & Reviewed Document Approval  |   |
| Document Effective Date: 8/8/12   |   |
| Document Approval Date (date when all approvals are complete): 8/8/12   |   |
| System:   |   |
| Phlebotomy Laboratory Standardization Committee   | Date: 8/8/12  |
| Site: <b>Fairview Clinics</b>   |   |
| Edrie Murphy, Laboratory Director   | Date: 8/7/12  |
| Site: <b>Fairview Lakes Medical Center</b>  |   |
| R. David Dexter, Medical Director   | Date: 8/3/12  |
| Site: <b>Fairview Northland Medical Center</b>  |   |
| Monna Marolt, Medical Director  | Date: 8/3/12  |
| Site: <b>Fairview Ridges Hospital</b>   |   |
| Timothy Kappel, Medical Director  | Date: 8/3/12  |
| Site: <b>Fairview Southdale Hospital</b>  |   |
| Daniel Berntsen, Medical Director   | Date: 8/5/12  |
| Site: <b>Fairview University Medical Center – Mesabi</b>  |   |
| Thomas Uncini, Medical Director   | Date: 8/3/12  |
| Site: <b>University of Minnesota Medical Center &amp; University of Minnesota Amplatz Children’s Hospital</b>   |   |
| Patricia Ferrieri, Medical Director,<br>Infectious Diseases Diagnostic Laboratory   | Date: 8/8/12  |
| Anthony Killeen, Medical Director, East Bank  | Date: 8/3/12  |
| John Eckfeldt, Medical Director, West Bank  | Date: 8/3/12  |
| Comments/Summary of Changes: <b>Change in collection containers and protocol to correlate with new BioMérieux blood culture instrumentation in the Infectious Diseases Diagnostic Laboratory.</b> |   |