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|  | **Specimen Collection Procedures for Microbiology**  **IPP#15** | **Dept:** | **Inpatient Phlebotomy 324305** |
| **Effective Date:** | **2/17/2011** |
| **Revised Date:** | **March 2019** |
| **Contact:** | **Laurie Watson** |
| **Name & Title: Greg Pomper, MD Medical Director** | | **Date:** |  |
| **Signature:** | | | |

1. **General Procedure Statement:** To give guidelines to staff concerning the proper Process for Blood Culture prep and collection and therapeutic drug monitoring.
   1. **Purpose:** This procedure is to serve as a guide for trained personnel in the Inpatient Phlebotomy Department to perform the services described herein. These guidelines should be used in conjunction with proper training and only by qualified Phlebotomists.
   2. **Responsible Department/Party/Parties:** 
      1. Procedure owner/ Implementer: Inpatient Phlebotomy, Microbiolgy
      2. Procedure prepared by: Laurie Watson MT(ASCP)
      3. Who Performs procedure: Inpatient Phlebotomy

1. **Procedure: Specimen Collection Procedures for Microbiology**
   1. **Blood Culture Collection Media**
      1. Blood culture collections are one of the most important functions of the microbiology laboratory as clinicians rely on this information to aid in the diagnosis of bacteremia and fungemia.
      2. Routine blood cultures are drawn in 2 BACTEC® Blood Culture bottles. Fungal blood cultures are collected in BACTEC MYCO/F LYTIC blood culture bottles. Pediatric Cultures are collected using the BACTEC Peds Plus TM /F bottles. AFB blood cultures are collected in the BACTEC MYCO/F Lytic blood culture bottle.
      3. BACTEC /F Blood Culture Media permit screening for bacteria, yeast and fungi present in the blood. It is an all-purpose enriched soybean-casein digest broth media. These media contain resins for antibiotic neutralization, providing increased recovery as compared with Standard Media. BACTEC bottles are capable of supporting growth of common obligate anaerobic, aerobic, and facultative organisms.
      4. BACTEC Peds Plus TM /F Medium is specialized media that accommodates small-volume samples (<+3mL of blood) to optimize detection of common pediatric pathogens.
      5. Bottles should be stored at 2-25˚C in a dry location OUT OF DIRECT LIGHT.
      6. Do Not use after expiration date on bottle. It is the responsibility of the person collecting the sample to verify the expiration date.
      7. Prior to use, each bottle should be examined for evidence of contamination such as cloudiness, bulging or depressed septum, or leakage. DO NOT USE any bottle showing evidence of contamination, leakage or damage.
2. **Materials required for Routine Blood Culture:** 
   1. Blood Cultures can be collected by any of the following methods. Specific information for how to perform each of these procedures can be found in the Specimen Collections Procedure :
      * 1. Venipuncture using a vacutainer
        2. Venipuncture using a vacutainer adapted Butterfly Blood Collection Set
        3. Venipuncture using a vacutainer adapted Butterfly Collection set with a syringe
      1. Selection of the correct bottles is necessary to ensure proper testing.
         1. For fungal or AFB cultures, obtain blood in a BACTEC MYCO/F LYTIC Bottle
         2. For Blood Cultures, obtain blood in a BACTEC aerobic and anaerobic bottles
         3. For Pediatric collections, obtain blood in a BACTEC Peds Plus TM /F bottle.
      2. Chlorhexidine prep kit
      3. Appropriate collection materials for collection method selected
      4. Latex free Tourniquet
      5. Gauze
      6. Latex free Gloves
      7. Adhesive bandage or tape
   2. **PROCEDURE** 
      1. Use a sterile Chlorhexidine prep kit to cleanse the venipuncture site as follows:
         1. Pinch the wings on the applicator to break the ampule and release the antiseptic.
         2. Do not touch the sponge. Squeeze the wings until the sponge is visibly moist.
         3. Use back and forth strokes for 30 seconds to thoroughly clean the site.
         4. Allow to air dry for 30 seconds
            1. **IMPORTANT:** For pediatric collections (< 2 months of age) clean a 2 ½ diameter area around the phlebotomy site ONLY with alcohol followed by povidine-iodine solution, then alcohol. To remove the iodine. (Iodine may be obtained from the ED)

**DO NOT USE CHORHEXIDINE PREP on patients < 2 months of age.**

* + - 1. DO NOT touch the site after skin prep. If palpitation is necessary, sterile gloves should be applied prior to palpation.
      2. Disinfect the top of the bottles with alcohol, using one alcohol pad for each bottle.
      3. Collect the sample using an approved venipuncture method found in the specimen collections procedure.
      4. Label bottles and document where the specimen was drawn, date, and time

1. **Procedure Notes**
   * + 1. Optimum volume in the BD BACTEC aerobic and anaerobic bottles is 8-10 mL of blood.
       2. Always fill the Aerobic (grey top) bottle first before filling the Anaerobic (purple top) bottle or the fungal/ mycotic (white top) bottle.
       3. The 5 ML marks on the sides of the bottles may be used as a guide.
       4. If using a syringe, a 20 CC syringe should be used. Draw up 16 – 20 mL of blood and divide equally between the aerobic and anaerobic bottles. Directly inoculate the bottles by puncturing the bottle septum with the needle and syringe.
       5. Pediatric (pink top) bottles optimal volume is 1-5 mL. Collect 1 mL for each year of age up to the age of 5.
       6. Draw a separate BACTEC Myco-F bottle and submit an explicit request for AFB Culture when this test is requested.
       7. Blood Culture samples are drawn before any other sample.
       8. For pediatric patients 9 and under, draw 1 ml/year of age.

**Blood Cultures for Acid Fast and Fungal Cultures****.**

**Materials required:**

Vacutainer Holder and needle or Syringe and Needle

1. Chlorahexidine prep kit
2. BACTEC blood culture bottles
3. Tourniquet (disposable/latex free)
4. Gauze
5. Gloves (latex free)
6. Adhesive bandage or first aid tape

**PROCEDURE:**

1. Use a Chlorahexidine prep kit to cleanse the venipuncture site as follows:
   1. Pinch the wings on the applicator to break the ampule and release the antiseptic. Do not touch the sponge. Wet the sponge by repeatedly pressing and releasing the sponge against the skin venipuncture site is visibly moist.
   2. Use repeated back and forth strokes of the applicator for 30 seconds to thoroughly clean the site.
   3. Allow to air dry for 30 seconds.
   4. Do NOT use Chlorhexidine on children under 2 months of age. Use iodine.
   5. **IMPORTANT:** For pediatric collections (< 2 months of age) clean a 2 ½ diameter area around the phlebotomy site ONLY with alcohol followed by povidine-iodine solution, then alcohol. To remove the iodine.
2. Disinfect the STOPPER of the BACTEC Myco/F bottle with alcohol and collect the sample through that end using the closed Vacutainer system or needle and syringe. It is important that the tube be thoroughly mixed before sending it to the laboratory.
3. Using the media meniscus as a guide, mark BACTEC culture vial label(s) at desired fill level. (each hatch mark on label is approximately 10 mls).
4. Collect the sample using the closed Vacutainer system or needle and syringe.  
     
   **Important:**At least one full aerobic and anaerobic bottle of blood are required on all patients, ranging between 8-10 mls. Bottles containing less than 5 ml of blood cannot be processed. In the event that only 5-9 mls is obtained, it all goes in 1 aerobic bottle. 1.0ml-3.0 ml pediatric bottles are available for patients less than 5 years old. The pediatric bottles must contain a minimum of 1ml or those specimens cannot be processed.
5. Deliver the BACTEC bottles with a patient label attached, along with requisition, to the Clinical Microbiology Laboratory.

Ref: NCCLS Document H3-A4 Vol.18 No. 7

Chloraprep One-Step Frepp Applicators direction panel

**INSTRUCTIONS RELATED TO SPECIMEN COLLECTION FOR MICROBIOLOGY**

AMINOGLYCOSIDES (Vancomycin, Gentamycin, Tobramycin)

**PRINCIPLE:** Certain courses of antibiotic therapy require a base level (trough) drawn prior to hanging the admixture in IV form. After this antibiotic is completely infused, another level is drawn at a pre-determined time afterward when the circulating volume is thought to be at its optimum (peak).

**COLLECTION / PRESERVATION / TRANSPORTATION:**

Specimens for Aminoglycoside levels are usually scheduled to correspond to the medication protocol the patient is on. These protocols generally call for trough, peak, or random monitoring of the patient's dose. When drawing these samples the phlebotomist should be sure to check with the nurse that the trough is being drawn before the dose and the peak is being drawn at the appropriate time for the delivery method. Random monitoring does not require special draw time considerations.

**5) Review/Revision/Implementation:**

All procedures must be reviewed at least every 2 years.

* All new procedures and procedures that have major revisions must be signed by the CLIA Laboratory Medical Director.

* All reviewed procedures and procedures with minor revisions can be signed by the designated section manager.

**6) Related Procedures:**

* 1. **Specimen Collection IPP#9**

1. **References:** 
   1. **ChloraPrep One-Step direction panel**
   2. **BD BACTEC Product Insert**
2. **Attachments:** **N/A**
3. **Revised/Reviewed Dates and Signatures:**

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| --- | --- | --- | --- |
| Review Date: | Revision Date: | Reason: | Signature: |
|  | 3/6/2017 | Reformatted to Medical Center standard template | Laurie Watson, MT, ASCP |
|  | 3/5/2019 | Revised signature page | Laurie Watson, MT, ASCP |
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