# DEPARTMENT OF PATHOLOGY UNIVERSITY OF IOWA HEALTHCARE UNIVERSITY OF IOWA HOSPITALS AND CLINICS Emory Warner Laboratories and Iowa River Landing Laboratory

# BLOOD CULTURE COLLECTION PROCEDURE PHL- 6

#### **PURPOSE**

The procedure provides instructions for sterile collection of blood samples for aerobic and anaerobic culture. Fungal and acid fast bacillus (AFB) blood cultures are collected using the same arm preparation.

# **POLICY**

Pathology personnel draw blood cultures during AM phlebotomy rounds and in clinic draw stations staffed by Pathology.

# **SUPPLIES**

- Requisition and labels
- Sterile packaged gloves
- 2, 10mL sterile syringes
- 2, Sterile BD transfer devices
- Safety-Lok blood collection set, 21 or 23 gauge
- CloraPrep One Step Applicator either 1.5 mL or 3 mL
- 3-4 sterile 70% alcohol swabs
- 1 anaerobic culture bottle
- 1 aerobic culture bottle
- One Isostat Fungal blood tube (8-10 ml per tube) (if ordered also need third syringe another sterile transfer device and an alcohol pad.) Pediatric Isolator tubes are available for peds patients. They require 2 mL of blood per tube.
- One AFB bottle (if ordered, also need another syringe, alcohol pad and transfer device). This bottle must be obtained from the Microbiology laboratory.
- 2x2 gauze Sponges
- Tape

**NOTE:** Pediatric patients may have only an aerobic bottle ordered. Check with nursing if the order is unclear.

**NOTE:** Additional syringes or a holder with a luer adapter and evacuated tubes may be needed for other laboratory testing.

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# I. OUT PATIENT GREETING AND IDENTIFICATION

Follow the Venipuncture procedure, PHL-1

# II. IN PATIENT GREETING AND IDENTIFICATION

Follow the Venipuncture procedure, PHL-1

#### III. BLOOD CULTURE COLLECTION

**CAUTION:** Follow the Venipuncture procedure, PHL-1 for general venipuncture guidelines. See "Collection Notes" 1 at the end of the procedure if 2 sets of blood cultures are ordered.

- 1. Position the patient (See PHL -1)
- 2. Tie tourniquet. (See PHL-1)
- 3. Select a vein and release tourniquet. (See PHL-1)
- 4. Select gauge of needle based on the on the chosen site and vein characteristics.
- 5. Set up equipment near where you will be drawing. Move a bedside table, if needed. Select equipment needed for the blood culture and all other phlebotomy draws. A third sterile syringe and transfer device is needed if a fungal isolator tube or AFB culture is ordered.
- 6. Open the sterile glove package on a flat surface without touching the inside. This is your 'sterile surface'.
- 7. Open syringes, needles and transfer devices and drop them out of the packages onto the sterile surface without touching them. Place any tubes and supplies needed for other lab draws next to the sterile surface.
- 8. If you need to find the vein again, tie tourniquet, note selected site and release tourniquet.
- 9. Clean the site with an alcohol pad, moving in a concentric circle. Allow the alcohol to dry.
- 10. Open ChloraPrep applicator and squeeze the wings together to release the antiseptic. Do not touch the sponge. Wet the sponge by repeatedly pressing and releasing the sponge against the skin until the liquid is visible. Scrub the site vigorously, with a side to side motion, for at least 30 seconds. Allow the site to air dry for at least 30 seconds or until it is completely dry.

**WARNING:** Start the 30 second scrub AFTER the site is wet. Keep repeated scrubbing within the first scrub area.

Date: 08/08/2012 PHL-6 Supersedes: 03/26/2012 Page 2 of 6 **WARNING:** If the patient is allergic to chlorhexidine see "Collection Notes", note 2 at the end of the procedure.

**WARNING:** Pediatric patients less than 2 months old, wipe gently with 3 different alcohol preps for a total of 60 seconds. Then let dry completely.

- 11. Do not touch the venipuncture site after it is cleaned.
- 12. Remove overcaps from anaerobic and aerobic bottles and clean the top of each bottle with a separate sterile alcohol pad. Use 1 pad per bottle and allow the tops to dry for 1 minute before inoculating. Alcohol pads may be left on top of the bottles while performing the venipuncture. Check to ensure the top is dry before inoculating the bottle. Do NOT touch the tops of the bottles. Follow the same procedure for fungal isolator tubes and AFB bottles.
- 13. Retie tourniquet. Do not allow the tourniquet to touch the cleaned site. If the cleaned site is touched, the area has to be re-prepped.
- 14. Put on sterile gloves. If this is an isolation room, remove non sterile gloves and put on sterile gloves without touching anything.
- 15. Assemble butterfly and syringe, place back on sterile surface. Keep second sterile syringe and transfer devices on sterile surface within easy reach. Do not touch anything that is not sterile.
- 16. You may palpate the vein with the sterile gloves. <u>ONLY</u> if you have not touched a non sterile item or surface.

**NOTE:** Collect blood following the guidelines below: **Adults:** 10 mL per bottle (anaerobic and aerobic)

Adult difficult draw: 5-10 mL per bottle

**NOTE:** If unable to collect 5 mL per bottle on an adult, call Microbiology at 6-2591 and ask for direction.

# **Pediatric patients:**

> 120 lb (55 Kg) = 10 ml 90-120 lb (40.5 Kg-54.5 Kg) = 7.5 ml 60-90 lb (27.5 Kg-40 Kg) = 5 ml 30-60 lb (13.5 Kg-27 Kg) = 2.5 ml 19-30 lb (8.5 Kg -13 Kg) = 1.5 ml < 19 lb (8 Kg) = 1.0 ml

16. Remove the first syringe from the butterfly needle by pinching off the tubing to stop blood flow and replace it with the next sterile syringe. (The filled syringe may be placed on your sterile surface.)

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- 17. After filling all necessary syringes, and tubes, activate needle and apply pressure to the venipuncture site.
- 18. Attach transfer device to the <u>last sterile syringe collected for the blood</u> <u>culture (usually syringe number 2)</u> and inoculate **anaerobic bottle first** with 10 ml of blood. Do not allow air to enter bottle. Invert to mix.
- Attach separate sterile transfer device to the first collected syringe and inoculate aerobic bottle with 10 ml of blood. Do not allow air to enter bottle. Invert to mix.

**NOTE:** If, due to a difficult draw, only one 10 ml syringe is collected, leave the transfer device on the syringe to transfer blood to both bottles. It is still important to fill the anaerobic bottle first. Use half of the sample in each bottle.

**NOTE:** When you are drawing other blood samples, use the last syringe filled for chemistry and hematology samples. If drawing a good vein, replace the last blood culture syringe with a hub and adapter and fill the evacuated tubes. Please see "Collection Note 3" for other acceptable ways to collect.

- 20. Bandage the puncture site
  - Out patients: Wrap the gauze in place with self stick wrap and ask that it be left on for 15 minutes. Suggest that the patient carry purse/brief case with the other arm.
  - In patients: Secure the gauze with paper or plastic tape and ask that it be left in place for at least 15 minutes.
  - Young child: Do not place bandage on a young child who may put it in their mouth and aspirate it.
- 21. Label the bottles in the presence of the patient with either Cerner or EPIC labels. Record the time, collection site, and your initials on the requisition. Check the "phlebotomist" circle on the requisition and print a "P" on the requisition for phlebotomy draw.

**NOTE:** Do not cover the bar code label on the bottle when applying the label.

- 22. Complete the process and disposal following PHL-1, The "Venipuncture Procedure".
- 23. Place the cultures and requisition in the runner's box, at the nurses station or send them to Microbiology in the pneumatic tube system. Place each bottle in a plastic cone-topped container before putting in the pneumatic tube system.

**NOTE:** Inpatient team, see huddle notes training materials for floor specific instructions.

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# **COLLECTION NOTES:**

- 1. If two sets of cultures are requested, the procedure above must be completely repeated for *each set*. Two different sites are preferred. *Each set requires a separate requisition*. Indicate which bottles go with which requisitions by labeling the bottles and requisitions as "Set 1" and "Set 2". If more than two sets are requested at the same time, draw the cultures, record the patient name and number, Doctors name and code and the patient area and give it to a phlebotomy manager.
- 2. If the patient is allergic to chlorhexidine, prep site with a 30 second 70% alcohol scrub. Let the site dry and then apply tincture of iodine in a concentric circle, starting at the center and let dry. This is no longer available in a kit. You will need to use multiple alcohol prep pads and ask nursing for iodine. If the patient is allergic to iodine, scrub the site vigorously with 70% alcohol for 60 seconds and let dry.
- 3. If all blood is collected into sterile syringes, the last syringe collected is the best one to use for the other laboratory tests because there is less chance of clotting in the third syringe. If you can only fill two 10 mL syringes, it is also acceptable to put 7 or 8 mL in each blood culture bottle and empty the syringes into the other blood collection tubes. The most important points are that the blood cultures were collected using sterile technique and that the first syringe is NOT put in the anaerobic bottle.

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# **REFERENCES:**

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