**PURPOSE:**

This document provides instructions for processing blood and body fluids flagged as positive by the BacTec FX blood culture system.

**SCOPE:**

This policy applies to UPMC Hanover Hospitallaboratory.

**PRINCIPLE:**

Blood culture bottles loaded on the BacTec FX system are monitored for growth using photo detectors. When growth is detected, positive bottles are flagged by an indicator on the front of the instrument and an alarm.

When a positive bottle is identified, it is removed from the instrument to be set up for Gram stain and culture. If indicated by Gram stain, BioFire BCID2 is set up on positive blood cultures.

**SPECIMENS:**

This procedure applies to blood, plueral fluid, peritoneal dialysate and ascites fluid.

**REAGENTS/SUPPLIES:**

Blood agar (BAP)

Chocolate agar (CHOC)

MacConkey agar (MAC)

BBE/LKV biplate

Brucella agar, pre-reduced (BRUC)

BioFire supplies

Sub-culturing/Venting unit

Frosted edge glass slides

Disposable Inoculating loops

**HAZARDS/PRECAUTIONS:**

* All positive blood and fluid cultures must be processed in the Biological Safety Cabinet (BSC).
* Do not remove slides for Gram stain from the BSC until they are completely dry.

**PROCEDURE:**

1. From the Epicenter, print report of the positive bottle, check Epicenter history of patient to determine number of bottles drawn and number positive. Record on printout.

2. Setting up the specimen:

a. Print specimen labels as needed. Place one on print out.

b. Label plates (set up plates as listed below)

**NOTE:** Include the following information on the plate

* Date and time the bottle was set up
* Bottle type: aerobic or anaerobic
* The number of bottles positive. e.g.1:4. 2:2 etc.

Aerobic bottle BAP, CHOC, MAC

Pediatric bottle BAP, CHOC, MAC

Anaerobic BAP, CHOC, MAC, BRUC, BBE/LKV

3. Label BioFire BCID (if indicated)

4. Clean 2 slides with alcohol and label each slide with 2 patient identifiers.

5. In the BSC, wipe bottle top(s) with an alcohol prep, allow to air dry.

6. Using the sub-culturing unit, prepare slides using one drop of blood per slide. Inoculate plates with one drop of blood per agar plate. Streak plates for isolation.

7. Incubate aerobic plates in the CO2 incubator. Place anaerobic plates in an anaerobic pack, seal and place in aerobic incubator #2.

8. Allow slides to dry in the BSC, then heat fix and Gram stain.

* Do not remove slides from BSC until dry.
* Do not dry slides on a heat block.

9. Stain and review Gram stain. Call positive results, see below for details.

10. Set up BioFire BCID2 panel (if applicable) following the "Blood Culture Identification, BioFire BCID2 Panel" procedure found in MCN.

11. When set up is complete, place bottles in storage cabinet next to the BacTec.

**Organisms seen on Gram stain**

* Document Gram stain results and critical call documentation in EPIC.
* Order isolates and components in EPIC under culture work card.
* Second and third shift may omit ordering isolates and components in EPIC as long BacTec print out and Epicenter patient history report are reserved for day shift review.
* Call ED patient results and Inpatient results within one hour to provider or nurse caring for patient.
* Results for patients that have been to another hospital should be called after the both the Gram stain and BioFire results are complete.
* Outpatient results for Gram stain and BioFire must be called to primary care provider or nursing care as soon as the BCID is complete.
* BioFire results for Inpatients must be reported to "BioFire Team" in EPIC secure chat.
* Nursing home patient results for Gram stain and BioFire must be called to the nurse caring for the patient as soon as the BCID is complete.

**No organisms seen on Gram stain**

* Reload bottle in BacTec within 3 hours. Incubate inoculated plates following step #7 of procedure.
* If bottle flags positive a second time, Gram stain and review slide. If no organisms are seen, replace bottle in BacTec without subculture to plates. If Gram stain shows organisms, follow procedure above for positive bottle set up.

**PROCEDURE NOTES:**

**If BCID2 result does not match Gram stain:**

1. Review the original Gram stain from the positive bottle and/or stain second slide.

2. If the discrepancy is not resolved, make new slides from the bottle and review. If this Gram stain matches the BCID results, repeat the BCID to confirm.

**Consult with the Microbiology department or laboratory manager for additional guidance if discrepancies cannot be resolved.**

3. **NOTE:** Do not report additional organisms identified on the BCID2 result report if the organism was not seen on the Gram stain. These results may be due to remnants of nonviable organisms present in the blood culture media. Notify Microbiology staff of the discrepancy.