PURPOSE:

Blood cultures are collected from patients with suspected sepsis or bacteremia. The isolation of any organism(s) from a blood culture must be considered significant and correlated with the clinical picture. Although primarily directed towards the processing of blood cultures, occasionally other specimen types (sterile fluids, abscess material, bone marrow, etc.) are received in blood culture vials. These bottles may be processed in the same manner as blood cultures.

The BACTEC FX instrument continuously monitors routine blood cultures for evidence of growth for 5 days. Negative results are auto verified as follows:

- No growth in 48 hours (preliminary)
- No growth in 5 days (final)

SAMPLE INFORMATION:

Type	Blood culture vial
Source	Blood or sterile fluid

REAGENTS and/or MEDIA:

Type	• BACTEC™ Plus Aerobic/F Culture Vials (blue top) • BACTEC™ Lytic/10 Anaerobic/F Culture Vials (purple top) • BACTEC™ Peds Plus™/F Culture Vials (pink top)
Source	BD
Volume	1 vial
Stability	Stable until date of expiration indicated on vial
Storage Requirements	Bottle storage before blood collection: • Room temperature
Criteria for rejection and follow up action	Do not use if: • The expiration date has passed • There are other signs of deterioration

SUPPLIES:

- BACTEC Plus Aerobic/F Culture Vials (**blue top**)
- BACTEC Lytic/10 Anaerobic/F Culture Vials (**purple top**)
- BACTEC Peds Plus™/F Culture Vials (**pink top**)
- BACTEC FX instrument

SPECIAL SAFETY PRECAUTIONS:

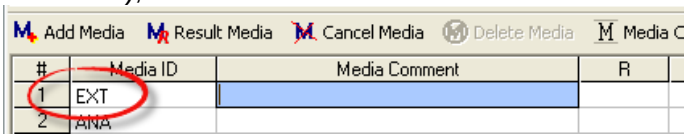
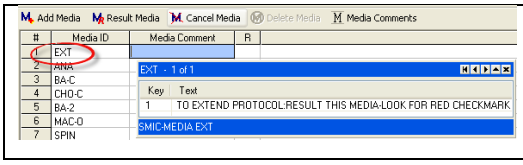
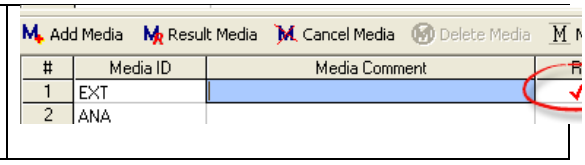
Containment Level 2 facilities, equipment, and operational practices for work involving infectious or potential infectious materials or cultures.

- Lab gown must be worn when performing activities with potential pathogens.
- Gloves must be worn when direct skin contact with infected materials is unavoidable.
- Eye protection must be used when there is a known or potential risk of exposure of splashes.
- All procedures that may produce aerosols, or involve high concentrations or large volumes should be conducted in a biological safety cabinet (BSC).
- The use of needles, syringes and other sharp objects should be strictly limited.

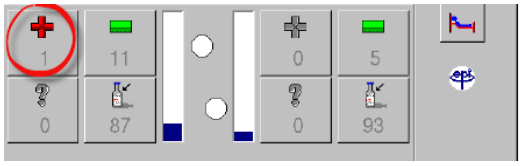
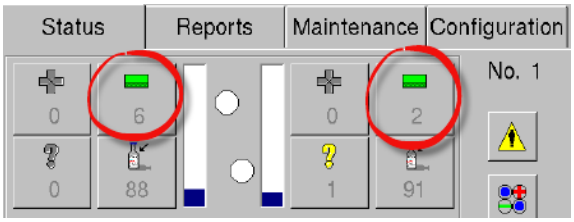
All patient specimens are assumed to be potentially infectious. Universal precautions must be followed. Since viable micro-organisms are used, all cultures must be handled with appropriate precautions. All equipment in contact with cultures should be decontaminated by appropriate methods.

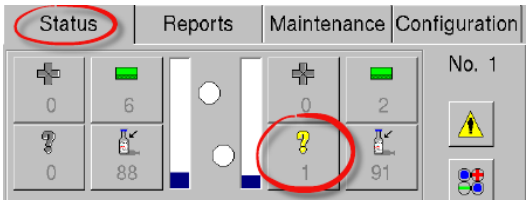
PROCEDURE INSTRUCTIONS:

Step	Action
Loading Vials onto the BACTEC FX	
1	Open the drawer. Ensure that the STATUS screen is displayed and the barcode scanner turns on.
2	Scan the BACTEC barcode first, then the LIS barcode.
3	Place the vial into next available station that displays a solid green indicator.
4	Scan and place any other bottles that need to be loaded.
5	Close drawer when finished
6	Delayed entry of bottles may lead to delayed results. Best practices dictate that bottles should be placed into the BACTEC as soon as possible after collection. If a delay was identified: • Visually inspect the bottle. If growth is apparent, treat as presumptively positive. Do not place bottle into the BACTEC. Subculture and make a smear for Gram-staining. • If the Gram-stain is negative and the bottle has been kept at room temperature for upt to 48 hours, it can be placed into the BACTEC.

Step	Action
Extending Incubation Time of Vials to 10 days	
1	From the Status display on the BACTEC screen: • Tap the "Drawer view" button  • Select the desired station and tap "OK" • Select "Modify" next to the Protocol field and change to 10 days, "Save".
2	From the LIS: Result Entry → Scan the order number to access the plate log/test comments: • If a CXSET requires extended protocol (two vials under one order number), must click on the AE Culture (CXBAE) in Test Comment area to populate the plate log below with the Aerobic culture media and follow steps 3 & 4 below. THEN click on the AN culture (CXBAN) in the Test Comment area to populate the plate log below with the Anaerobic culture media and repeat steps 3 & 4. • In plate log (Media Comments), look for the "EXT" media ID.  Follow EXT keypad (instructions are written in the keypad): • Double click in the box under "R" so a check mark appears, or click the "Result Media" button (see below). **This alerts the LIS to stop the 5 day reporting and change it to 10 day auto-reporting.**   • Save the culture to save these changes to the plate log.
3	Repeat steps 1 → 4 for each vial.
4	If culture is negative: • A 48 hour negative preliminary report will be automatically released by LIS. • A 10 day no growth final report will automatically be released. • Manual reporting negative bottles on extended protocol is not required.

If:	Then:
Resolving BACTEC FX System Indicator Warnings	
Yellow glow:	**Power failure/Communication interruption (most common cause):** Check instrument for error message: • BACTEC FX Touch screen → Status tab • Touch the ⚠ button and view the Alert List. Power interruptions will display the following alerts: "**Reboot Reason: Powerfail**", "**The instrument has lost connectivity to the server**", "**EpiCenter Communications failure**". • Alerts other than those above → Refer to BACTEC FX User Training Manual. Log into Epicentre computer: • Log-in to Windows under **EpiCenter User** account (password taped to computer). When power goes out, Windows will re-boot and require re-login again. • Icon will display:  Communication should RESYNC  after logging into Windows (should take about one minute after logging in). • A System Message window should pop-up displaying the errors. Click the "x" button to close or delete them • The yellow system indicator lights on BACTEC door will stop glowing. If communication does not automatically RESYNC, re-SYNC manually: • In Windows, double-click on the EpiCenter icon. → Log in to the software using "micro" username (password on computer). • System will cycle through icons:  →  →  and automatically re-establish communication with BACTEC. • Once EpiCenter resynchronizes with the BACTEC, the yellow system indicator lights on BACTEC door will stop glowing. (Communication/Resync between BACTEC and EpiCenter is OK).

Red glow	**Positive vial:** • Touch screen→ Status display→ Look for button on either Drawer A/ B (see example below; Positive Vial in Drawer A)  • Open appropriate Drawer → Look for station(s) with a FLASHING Red LED then follow the steps below to resolve: a) Remove vial from station b) Scan bottle barcode c) Positive vials may be returned to BACTEC FX if no bacteria seen in Gram **up to 5 hours** after the vial have been removed.
Green glow	**Negative vial:** • Touch screen→ Status display→ Look for button on either Drawer A/ B (see example below; Negative Vials in both Drawer A and B)  • Open appropriate Drawer → Look for station(s) with a FLASHING Green LED then follow the steps below: a) Remove all vials from stations with flashing Green LED's b) Discard in a large yellow Biohazard sharps container

If:	Then:
Identifying Anonymous Vial	
1	Check the Status screen to see which Drawer houses the Anonymous Vial. • *Example below: 1 Anonymous Vial is in Drawer B, zero Anonymous Vials in Drawer A.* 
2	Open Drawer and locate station(s) with a flashing Yellow LED • If the station flashes YELLOW and RED, then the vial is also POSITIVE.
3	Remove vial from station → touch screen displays the message: "ID01: Positive- Anonymous pulled. Scan sequence… (message truncated)… remove". (Message instructs the user to scan the bottle barcode & accession number) • Barcode scanner activates automatically when vial is removed.
4	• Scan **bottle** barcode 1st. • Scan accession/order number barcode • After scanning the barcodes, the user has two options: i. Place the bottle back into the BACTEC or ii. Press the SAVE button on touch screen to remove bottle from BACTEC and clear the station (DO THIS FOR POSITIVE VIALS).
5	**If vial was flashing yellow ONLY:** • Replace vial back into station (FLASHING Green LED) **If vial was flashing yellow AND red:** • Press the SAVE button on the screen (this removes the positive vial from BACTEC and clears the station).
7	If there are more flashing Yellow or Yellow/Red stations, repeat steps 2 → 5
8	If there are no more Anonymous Vials → close Drawer. • Check Status screen. Question mark will be grayed out if no more Anonymous Vials are detected

REFERENCES:

- BACTEX FX Instrument User Manual

REVISION HISTORY:

REVISION	DATE	Description of Change	REQUESTED BY
1.0	06-Nov-17	Initial Release	L. Steven