Blood Culture Collection
What is a Blood Culture?

- A blood culture is a laboratory test in which blood is injected into bottles with culture media to determine whether microorganisms have invaded the patient’s bloodstream.
What is a Blood Culture?

- Blood cultures are ordered as a set, which consists of 2 bottles (1 aerobic bottle & 1 anaerobic bottle).
The Contaminated Blood Culture

- If the skin is not adequately cleansed before drawing blood for culture, bacteria on the skin will be injected into the bottle, producing a false positive blood culture.
- It is sometimes difficult for the physician to determine whether the bacteria growing in the blood culture is a real pathogen causing bloodstream infection or whether bacteria on the skin have contaminated the culture. This can lead to excess use of antibiotics and prolongation of hospital stay.
Principles for Collection

• Gloves will be worn in accordance with standard precautions.
• A physician’s order must be obtained for specimen collection.
• Appropriate verification of the patient's identity, by means of an armband or area specific procedure, will occur before the specimen collection.
• Cultures should be drawn before administration of antibiotics, if possible.
• If at all possible, blood cultures should not be drawn from lines, but should be drawn via venipuncture.
Materials

- Chlorhexidine swabs (1-2 packages)
- Alcohol swabs
- Blood culture bottles (2 bottles per set)
- 2 syringes (adult: 20 cc, pediatric: 5 cc)
- 2 needles (adult: 22 gauge or preferably larger butterfly or standard needle; pediatric: 25 or 23 gauge butterfly or standard needle)
- Gloves (sterile & nonsterile)
- Tourniquet
- Sterile gauze pad
- Adhesive strip or tape
- Self-sticking patient labels
- Plastic zip lock specimen bags
Steps 1-3 – Check, Explain, Wash

1. Identify the patient by checking the arm band or area-specific procedure.
2. Explain the procedure to the patient.
3. Wash hands with soap and water with friction for 15 seconds or use alcohol based hand rub.
Step 4 – Prep Cap

4. Prep the rubber cap of the blood culture bottles with an alcohol pad in a circular motion. Allow the alcohol to dry.

* Depending on specific computer settings, the video portion may not display properly on some PCs.
Step 5 - Prep the Puncture Site

5. Prep the puncture site with chlorhexidine:
   - Using aseptic technique, remove the applicator from its package.
   - Holding the applicator downward, gently squeeze the wings to release the solution.
   - Scrub with a back & forth motion using friction for 30 seconds on dry skin or 2 minutes on wet skin.
   - Do not wipe the site after cleansing the skin with chlorhexidine.
Step 5 (cont.) - Prep Puncture Site

5. Prep the puncture site with chlorhexidine:
   - Using aseptic technique, remove the applicator from its package.
   - Holding the applicator downward, gently squeeze the wings to release the solution.
   - Scrub with a back & forth motion using friction for 30 seconds on dry skin or 2 minutes on wet skin.
   - Do not wipe the site after cleansing the skin with chlorhexidine.
Step 5 (cont.) - Prep Puncture Site

5. Prep the puncture site with chlorhexidine:
   - Using aseptic technique, remove the applicator from its package.
   - Holding the applicator downward, gently squeeze the wings to release the solution.
   - Scrub with a back & forth motion using friction for 30 seconds on dry skin or 2 minutes on wet skin.
   - Do not wipe the site after cleansing the skin with chlorhexidine.
Step 6 - Gloves

6. Apply gloves:

If palpation of site prior to puncture is anticipated, wear sterile gloves.

If palpation of site prior to puncture is not anticipated, wear nonsterile gloves.
Step 7 – Draw Blood

7. Draw blood. Note the appropriate volume to obtain:

<table>
<thead>
<tr>
<th></th>
<th>Syringe needed</th>
<th>Aerobic bottle</th>
<th>Anaerobic bottle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td>20 ml</td>
<td>10 ml</td>
<td>10 ml</td>
</tr>
<tr>
<td>Pediatric</td>
<td>20 ml</td>
<td>2.5 - 10 ml</td>
<td>2.5 - 10 ml</td>
</tr>
<tr>
<td>Infant</td>
<td>3 ml</td>
<td>0.5 - 1 ml</td>
<td>0.5 - 1 ml</td>
</tr>
<tr>
<td>Adult (low volume)*</td>
<td>3 ml</td>
<td>All</td>
<td>None</td>
</tr>
</tbody>
</table>

Do not overfill bottles (do not add more than 10 ml of blood to each bottle)

*In some cases, it may not be possible to obtain 20 ml blood from an adult. If 10 ml or less is obtained, place all of the blood in the aerobic bottle.
Step 8 - Mix

8. Gently rotate the bottles to mix the blood & the broth (do not shake vigorously).

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Steps 9 & 10 – Label & Send

9. Place the patient label on each bottle & label each culture bottle with the site of specimen collection. When applying patient identification labels, do not cover the bar code label on the blood culture bottles. Attach the laboratory requisition.

10. Send the blood cultures to the Clinical Microbiology receiving area as soon as possible.
Step 11 - Document

11. Document the following in the medical record:
   - Date & time specimen obtained
   - Site of specimen collection

Patient Progress Notes:

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Date  Time                  Notes
11/3/03  1 PM          Blood cultures x 2 drawn from
                      right & left antecubital veins.
                      John Doe, RN
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Step 12 – Second Set

12. If 2 sets of blood cultures have been ordered, obtain the second set in the same manner as the first, making a new venipuncture at a different site.
Updating Your Records!

- **Completion Notice.**
  Note: Use back arrow to return to this page.

- **Blood Culture Specimen Collection Competency.**
  Note: Use back arrow to return to this page.