SANFORD
Laboratories

BLOOD CULTURE COLLECTION

Specimens for blood cultures must be submitted in blood culture bottles.

1. Perform hand hygiene per policy, and identify the patient using at least two unique identifiers.

2. Apply gloves and aseptically select and assemble necessary blood culture supplies.

3. Apply tourniquet and select the best possible vein for venipuncture by inspection and/or palpation. Release the tourniquet once vein is selected.

4. Site preparation (select one of the following methods):

   A. Chloraprep Method (**> 2 months old**):
      1) Scrub the venipuncture site with a Chloraprep applicator. Scrub the entire venipuncture site (3-4 square inches) for 30 seconds. **DO NOT BLOT OR FAN. DO NOT REPALPATE**. Allow site to air dry for at least 30 seconds.
      2) Go to step 1.

   OR

   B. Betadine Method (≤ **2 months old**):
      1) Cleanse the site for 30 seconds with a 70% alcohol wipe, working outward from the venipuncture site in a circular motion. Allow to air dry for 30 seconds.
      2) Cleanse the site with a 10% providone-iodine swab or betadine prep, working outward from the venipuncture site in a circular motion.
      3) Repeat step 2) with a second, fresh providone-iodine swab or betadine prep and allow to air dry for 60 seconds.
      4) Go to step 1.

   OR

   C. 70% alcohol Method (Chloraprep/Betadine sensitivity or ≤ **2 months old**):
      1) Cleanse the site for 30 seconds with a 70% alcohol wipe, working outward from the venipuncture site in a circular motion. Allow to air dry for 30 seconds.
      2) Repeat step 1) with a seconds, fresh 70% alcohol wipe and allow to air dry for 30 seconds.
      3) Patients' ≤ 2 months old: cleanse the site a third time with a fresh 70% alcohol wipe as described in steps 1) and 2).
      4) Go to step 1.

1. Inspect bottles to ensure there are no cracks and the sensor at the bottom is grey. Verify bottles are not expired.

2. Remove plastic flip cap and clean the exposed rubber septum with 70% isopropyl alcohol. Scrub vigorously and allow to air dry for 30 seconds.

3. Perform venipuncture using a butterfly and hub or transfer device or syringe with a butterfly and transfer device.

4. The ideal volume of blood collected is 20 mL (10 mL in aerobic bottle and 10 mL in anaerobic bottle). Refer to chart below to determine which bottles to fill.

5. Do not introduce air from syringe into the anaerobic (orange) bottle. Both the light green and orange bottles should be filled in most cases. The yellow bottle should only be used for pediatric collections or in cases of extremely difficult collections.

6. Label bottles with collection site and type, collector's initials and collection date and time. **Do not cover the bar code printed on the bottle and avoid labeling over the red areas pictured below**. Swirl bottles gently to mix, but do not vent. **Keep at room temperature**.

Recommended (IDEAL) Volumes

For Pediatric and NICU patients:

Health Care Providers should consider the **maximum safe volume** that can be drawn from each patient on a case-by-case basis. For babies and children, the **blood volume drawn for culture should not exceed 1% of the patient's blood volume**[3]. Keeping in mind that studies have indicated that the volume of blood collected is related to the pathogen yield. So, the more blood that is tested the higher the rate of identifying the infection.

The blood volumes of children change with age. They initially range from 76 to 86 mL/kg at birth and decrease to the adult value of 70 mL/kg by 15 years of age. Therefore, until additional clinical data are available, a recommendation of obtaining no more than 1% of a child or adolescent's total blood volume per collection makes physiological sense.[3]

Weight of Patient (kg)	Culture Set #1	Culture Set #2	Total Volume for Culture	Bottle(s)	Allocation
≤ 1	0.7mL	NA	1% of patient's total blood volume	Peds bottles; yellow cap (BacT/Alert PF or PF PLUS)	Entire amount into 1 peds bottle
1.1 – 2	0.7mL	0.7mL	1% of patient's total blood volume	Peds bottles; yellow cap (BacT/Alert PF or PF PLUS)	Entire amount into 1 peds bottle for each culture
2.1 - 6.0	2mL	2mL	4mL	Peds bottles; yellow cap (BacT/Alert PF or PF PLUS)	Entire amount into 1 peds bottle for each culture
6.1 – 12.7	3mL	3mL	6mL	Peds bottles; yellow cap (BacT/Alert PF or PF PLUS)	Entire amount into 1 peds bottle for each culture
12.8 – 36.3	10mL	10mL	20mL	Aerobic bottle; green cap (BacT/Alert FA or FA PLUS)	Entire amount into 1 aerobic bottle for each culture. **DO NOT** exceed 10mL per bottle.
> 36.3 & (adults)	16-20mL	16-20mL	32-40mL	Aerobic bottle; green cap (BacT/Alert FA or FA PLUS) and Anaerobic bottle; orange cap (BacT/Alert SN or FN PLUS)	Equal Split; 8-10mL into each bottle type, for each culture. **DO NOT** exceed 10mL per bottle.

Less Than Ideal Volume Collected (Irrespective of Patient Weight)

Total Volume Collected	Bottle(s)	Allocation
0.5 – 2mL (< 18 years)	Peds bottles; yellow cap (BacT/Alert PF or PF PLUS)	Entire amount into 1 peds bottle.
5 – 10mL (>19 years)	Aerobic bottle; green cap (BacT/Alert FA or FA PLUS)	Entire amount into 1 aerobic bottle.
11 – 15mL	Aerobic bottle; green cap (BacT/Alert FA or FA PLUS) and Anaerobic bottle; orange cap (BacT/Alert SN or FN PLUS)	10 mL into 1 aerobic bottle, remainder into anaerobic bottle. **DO NOT** exceed 10mL per bottle.