

Recommendations for blood culture collection

A SUMMARY OF GOOD PRACTICE

A) Using winged blood collection set (preferred method of collection)^{59, 60, 61}

1. Prepare blood collection kit

Confirm the patient's identity and gather all required materials before beginning the collection process.

Do not use blood culture bottles beyond their expiration date, or bottles which show signs of damage, deterioration or contamination. It is recommended to mark the blood culture bottle about 10 ml above the media level to indicate the correct filling level.



2. Prepare bottles for inoculation

Wash hands with soap and water then dry, or apply an alcohol hand rub or another recognized effective hand rub solution.

Remove the plastic "flip-cap" from the blood culture bottles and disinfect the septum using an appropriate and recognized effective disinfectant, such as chlorhexidine in 70% isopropyl alcohol, 70% isopropyl alcohol, or tincture of iodine in swab or applicator form. Use a fresh swab/applicator for each bottle. **Allow bottle tops to dry in order to fully disinfect.**



3. Prepare venipuncture site

If skin is visibly soiled, clean with soap and water. Apply a disposable tourniquet and palpate for a vein. **Apply clean examination gloves** (sterile gloves are not necessary).

Cleanse the skin using an appropriate disinfectant, such as chlorhexidine in 70% isopropyl alcohol or tincture of iodine in swab or applicator form. **The venipuncture site is not fully clean until the disinfectant has fully evaporated.**



4. Venipuncture

Attach a winged blood collection set to a collection adapter cap.

To prevent contaminating the puncture site, do not re-palpate the prepared vein before inserting the needle. Insert the needle into the prepared vein.



5. Culture bottle inoculation

Place the adapter cap over the **aerobic bottle** and **press straight down** to pierce the septum. Hold the bottle upright, below the level of the draw site, and use the graduation lines to accurately gauge sample volume*. Add 10 ml of blood per adult bottle and up to 4 ml per pediatric bottle. Once the aerobic bottle has been inoculated, remove the adapter cap and repeat the procedure for the **anaerobic bottle**.

The use of blood collection sets without blood collection adapters is not recommended.



6. Other blood tests

If blood is being collected for other tests, an insert placed into the adapter cap may be required. The insert is used to guide blood collection tubes onto the needle.

If other blood tests are requested, always collect the blood culture first.



7. Finish the procedure

Discard the winged collection set into a sharps container and cover the puncture site with an appropriate dressing. Remove gloves and wash hands before recording the procedure, including indication for culture, time, site of venipuncture, and any complications.

Ensure additional labels are placed in the space provided on the bottle label and do not cover the bottle barcodes, and that the tear-off barcode labels are not removed. If additional labels contain a barcode, they should be positioned in the same manner as the bottle barcode.

Inoculated bottles should be transported to the laboratory for testing as quickly as possible, preferably within 2 hours per CLSI.⁽¹⁾ If delays are expected, it is important to refer to the manufacturer's Instructions for Use for guidance.



■ 1) Principles and procedures for Blood Cultures; Approved Guideline, CLSI document M47-A. Clinical and Laboratory Standards Institute (CLSI); Wayne, PA. 2007

* Avoid holding the blood culture bottle in a horizontal or upside down position or drawing blood with a needle connected directly to the adaptor cap, as fill level cannot be monitored during collection and there is a possible risk of media reflux into the bloodstream.

These recommendations illustrate the best practices for blood culture collection based on the World Health Organization recommendations (WHO guidelines on drawing blood: best practices in phlebotomy. 2010. ISBN 978 92 4 159922 1). Best practices may vary between healthcare facilities; refer to guidelines applicable in your facility.

Recommendations for blood culture collection

A SUMMARY OF GOOD PRACTICE

B) Using needle and syringe

Conventional needles and syringes should be replaced wherever possible with winged blood collection sets, which are safer.^(1, 2, 3)

They should only be used if prevention measures to Accidental Blood Exposure are strictly applied*. Needles must not be recapped, purposely bent or broken by hand, removed from disposable syringes or otherwise manipulated by hand.

1. Prepare blood collection kit

Confirm the patient's identity and gather all required materials before beginning the collection process.

Do not use blood culture bottles beyond their expiration date, or bottles which show signs of damage, deterioration or contamination. It is recommended to mark the blood culture bottle about 10 ml above the media level to indicate the correct filling level.



■ 1) Applied Phlebotomy. Dennis J. Ernst. Lippincott Williams & Wilkins, 2005 ■ 2) Essentials Of Medical Laboratory Practice. Lieseke C, et al. 2012 ■ 3) Qamruddin A, et al. J Clin Pathol. 2008 61:509-13 ■ 4) Principles and procedures for Blood Cultures; Approved Guideline, CLSI document M47-A. Clinical and Laboratory Standards Institute (CLSI); Wayne, PA. 2007

* Refer to recognized guidelines such as those issued by the WHO or CDC:
http://www.who.int/injection_safety/phleb_final_screen_ready.pdf
<http://www.cdc.gov/niosh/docs/2000-108/pdfs/2000-108.pdf>

2. Prepare bottles for inoculation

Wash hands with soap and water then dry, or apply an alcohol hand rub or another recognized effective hand rub solution.

Remove the plastic "flip-cap" from the blood culture bottles and disinfect the septum using an appropriate and recognized effective disinfectant, such as chlorhexidine in 70% isopropyl alcohol, 70% isopropyl alcohol, or tincture of iodine in swab or applicator form. Use a fresh swab/applicator for each bottle. **Allow bottle tops to dry in order to fully disinfect.**



3. Prepare venipuncture site

If skin is visibly soiled, clean with soap and water. Apply a disposable tourniquet and palpate for a vein. **Apply clean examination gloves** (sterile gloves are not necessary).

Cleanse the skin using an appropriate disinfectant, such as chlorhexidine in 70% isopropyl alcohol or tincture of iodine in swab or applicator form. **The venipuncture site is not fully clean until the disinfectant has fully evaporated.**



4. Venipuncture

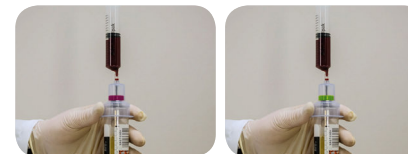
Attach the needle to a syringe.

To prevent contaminating the puncture site, do not re-palpate the prepared vein before inserting the needle. Insert the needle into the prepared vein.



5. Culture bottle inoculation

Collect the sample. Transfer the blood into the culture bottles, starting with the **anaerobic bottle**. Hold the bottle upright and use the graduation lines to accurately gauge sample volume. Add 10 ml of blood per adult bottle and up to 4 ml per pediatric bottle. Once the anaerobic bottle has been inoculated, repeat the procedure for the **aerobic bottle**.



6. Finish the procedure

Discard the needle and syringe into a sharps container and cover the puncture site with an appropriate dressing. Remove gloves and wash hands before recording the procedure, including indication for culture, time, site of venipuncture, and any complications.

Ensure additional labels are placed in the space provided on the bottle label and do not cover the bottle barcodes, and that the tear-off barcode labels are not removed. If additional labels contain a barcode, they should be positioned in the same manner as the bottle barcode. Inoculated bottles should be transported to the laboratory for testing as quickly as possible, preferably within 2 hours per CLSI.⁽⁴⁾ If delays are expected, it is important to refer to the manufacturer's Instructions for Use for guidance.



These recommendations illustrate the best practices for blood culture collection based on the World Health Organization recommendations (WHO guidelines on drawing blood: best practices in phlebotomy. 2010. ISBN 978 92 4 159922 1). Best practices may vary between healthcare facilities; refer to guidelines applicable in your facility.

bioMérieux S.A.
69280 Marcy l'Etoile
France
Tel.: 33 (0)4 78 87 20 00
Fax: 33 (0)4 78 87 20 90

www.biomerieux.com
www.biomerieux-diagnostics.com


BIOMÉRIEUX
PIONEERING DIAGNOSTICS