



# **STANDARD OPERATING PROCEDURE FOR COLLECTION OF BLOOD SPECIMENS BY VENEPUNCTURE**

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1<sup>st</sup> Edition 2016**

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2016

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# Standard Operating Procedure for Collection of blood specimens by venepuncture

## 1.0 Objective :

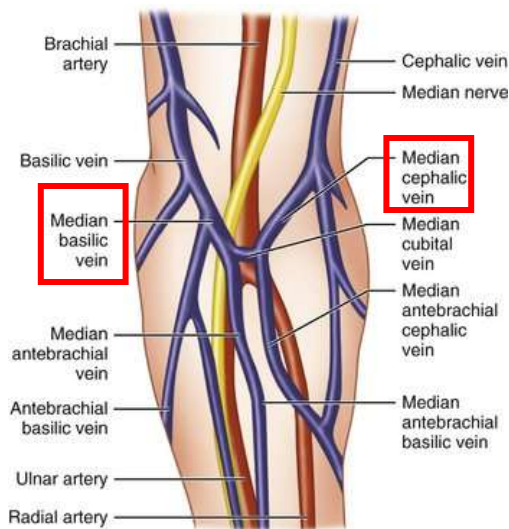
This standard operating procedure (SOP) is applicable to the collection of blood specimens by venepuncture for the purpose of medical diagnostic testing, red cell cross-matching, ongoing monitoring and / or evaluation of patient responses to treatment.

This SOP intends to standardise the venepuncture procedure for blood specimens collection executed by all related medical staffs involved in patient care.

1. An authorised prescriber's written order of blood specimens is required.
2. Venepuncture must be performed using aseptic technique.
3. Venipuncture shall not be performed
  - a. on an extremity with an active shunt or fistula, or central vascular access device
  - b. on the same side as axillary lymph node surgery as in the case of a mastectomy
  - c. from an area where a haematoma is present
  - d. from an artery or proximal to an active intravenous site
  - e. on the skin area with evidence of infection such as cellulitis or abscess.
4. In the case of a difficult venepuncture, it is recommended **NOT MORE THAN TWO** attempts of venepuncture on any one patient by a single phlebotomist at any one time. Rest the patient for a while and get help from colleagues or superiors. *(This is NOT applicable to emergency cases)*
5. The **Blood Collection Order of Draw** must be followed.

## 2.0 Procedure :

1. Check the authorised prescriber's order.
2. Assemble all equipment and supplies (Gloves, alcohol swab, vacutainer(s), needle, tourniquet, gauze and tape, and sharp container) and ensure all vacutainer tubes have not expired.
3. Wash hands thoroughly and put on gloves. When more than one patient is having venepuncture, gloves should be changed between patients, and use of hand sanitizer or hand washing should be done each time when gloves are changed.
4. **Greet the patient, introduce yourself and indicate the procedure to be performed.**
5. **Confirm the identity** of the patient. This confirmation involves ensuring the **two unique** patient identifiers either given by the patient verbally (i.e. to ask patient for their full name and also birthday or MRN or IC no etc.) or from the patient's wrist band or other recognised ID, that match with the information on the request order and the patient labels.
6. **Check to ensure the patient's unique identifiers on the label are correct and label the correct specimen vacutainer(s)** in front of the patient.
7. Once identification confirmed, **do not leave the patient**, otherwise the identification process must be repeated.
8. Position the patient so that he/she is seated or reclined comfortably with his/her arm extended to form a straight line from the shoulder to the wrist. In either situation, the patient's arm and elbow should be firmly supported with a pillow or towel and not bent.
9. Check both arms to identify a vein, preferable one which runs along to inner part of the forearm close to the surface of the skin. Use of the median cephalic vein or median basilica vein is preferable. Select the larger and fuller vein.



10. Palpate and trace the path of the vein several times with your index finger.
11. Tap the vein at the site of the draw with your index finger and second finger; this will cause the vein to dilate.

12. Apply tourniquet 8-10 cm above the desired site of puncture with enough pressure to compress the vein but not the artery.
13. Ask the patient to hold a fist tightly. They should avoid opening and closing the fist as studies show that this can increase blood potassium.
14. Clean the draw site with an alcohol swab (70% isopropyl alcohol) in a circular motion from the center of the area outwards and allow the alcohol to dry (30-60 seconds). DO NOT touch the venepuncture site again.
15. Using a sterile 21-23 gauge needle attached to a holder for vacutainer or a syringe, gently insert the needle into the vein at an angle roughly 15-30 degrees parallel to the vein making sure that the bevel of the needle is pointing up.
16. Push the vacutainer tube into the holder according to **Blood Collection Order of Draw**; or draw the correct amount of blood required into a syringe.
17. As the blood begins to flow into the specimen tubes, have the patient to open the hand.
18. Change the tubes for multiple specimen collection and gently invert tubes immediately upon filling following the instruction as outline in the **Blood Collection Order of Draw**.
19. Once the last vacutainer tube has been filled, remove the collection tube from the holder and remove the tourniquet; or once the adequate amount of blood has been collected, loosen the tourniquet.
20. Remove the needle at the same angle it was inserted.
21. Using gauze apply pressure to the site of the venepuncture for 2 minutes or until bleeding stops.
22. Dispose off the needle into the designated sharps container.
23. For the blood specimens taken by the syringe, filled the pre-labeled specimen tubes according to the **Blood Collection Order of Draw**.
24. Apply tape and gauze to the venepuncture site.
25. **Perform final patient identification with the patient** either verbally or check on patient's wrist band and the label on the specimen tubes.
26. **All blood specimens for blood grouping, Group screen and hold (GSH) and cross-match (GXM),** the phlebotomist must write down his/her **name and initial at the column "Blood taken by .....and blood labeled by ....."** on the **Blood Transfusion request form and initial at the specimen label in the presence of the patient.**
27. Advise the patient to consult the doctor if any complications develop at the site of venepuncture.
28. Remove the gloves and perform hand hygiene.
29. Ensure the specimens are transported to the laboratory as soon as possible.

## Blood Collection Order of Draw

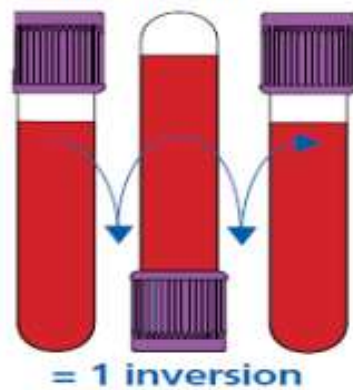
Vacutainers should be used in the following sequence, based on Clinical and Laboratory Standards Institute guidelines, to limit contamination of tube additives from tube to tube, which may cause erroneous result with some tests.

Closure Color	Collection Tube	Mix by Inverting
Aerobic/Anaerobic	Blood Cultures*	8 to 10 times
Light Blue	Sodium Citrate Tube**	3 to 4 times
Red	Serum Tube	5 times
Gold	BD Vacutainer SST Gel Separator Tube	5 times
Light Green	BD Vacutainer PST Gel Separator Tube with Heparin	8 to 10 times
Dark Green	Heparin Tube	8 to 10 times
Lavender	EDTA Tube	8 to 10 times
Grey	Fluoride Tube	8 to 10 times

\* A Sodium Citrate tube must be drawn and discarded prior to the collection of blood cultures.

\*\* When using a winged blood collection set, a Sodium Citrate discard tube must also be drawn.

Mix gently, inverting as shown



**References:**

CLSI. Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture; Approved Standard-Sixth Edition. CLSI document H3-A6. Wayne, PA; Clinical and Laboratory Standards Institute; 2007.

BD Diagnostics (Becton, Dickinson and Co.) Pre-Analytical Systems, New Jersey, USA, www.bd.com

*Adopted from BD Diagnostics (Becton Dickinson and Co.)*