

BLOOD COLLECTION PROCEDURES FOR OUTPATIENTS

A. Purpose:

To draw blood for analysis in the clinical laboratory. To provide clinical information to the physician efficiently for use in clinical decisions.

NOTE: Universal Precautions are to be always observed.

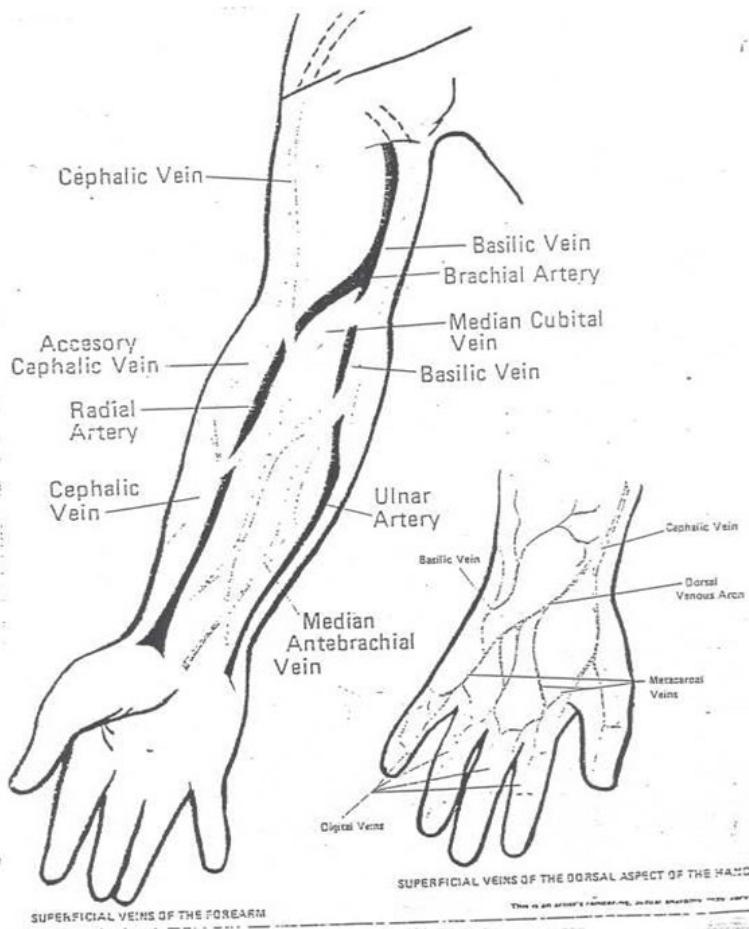
B. Material Needed:

1. Disposable sterile collection needles, 21G or 22G and/or butterfly needles; 21G or 23G
2. Disposable "Needle Pro" adapters
3. Alcohol sponges and/or Chloroprep sponges
4. Gauze pads
5. Specimen tubes
6. Paper tape
7. Marking pen
8. Nitrile (non-latex) gloves
9. Tourniquets (non-latex) – disposable/one time use only.

C. Procedure:

1. Ask the patient to identify themselves by stating their name and date of birth.
2. **Position the Patient**
Seat the patient comfortably in a blood-drawing chair and position his or her arm on an armrest, extending the arm to form a straight line from the shoulder to the wrist.
3. **Gloves**
Clean hands before donning gloves before each patient by washing using soap and water or hand sanitizer. Hand sanitizer can be used 15 consecutive times before hand washing must occur. Allow hands to dry and don gloves. These steps should be followed in the presence of the patient.
4. **Select a Vein Site:**
Selecting the proper vein is important in this process. Devote sufficient time to locating the best vein before inserting a needle. Make sure you have adequate lighting.

Place a tourniquet on the patient's arm. You must be aware of the time the tourniquet is in place. Do not leave tourniquet on for more than 1-1½ minutes. Choose the vein that feels fullest. Ask the patient to make a fist. This makes the veins more prominent and easier to enter. Vigorous hand exercise, "pumping," should be avoided as it may affect some test values. Use your index finger to palpate and trace the path of the vein. ("How to Make Your Veins Pop Out to Give Blood - Phlebotomy Examiner"). Thrombosed veins lack resilience, feel cord-like, and roll easily.



Feel for the median cubital vein first; it is usually bigger and anchored better, and it bruises less. The cephalic vein (depending on size) is the second choice over the basilic vein because it does not roll or bruise as easily.

The bend of the elbow is the best place to make a puncture. When this is not possible, other suitable sites include the surface of the forearm, knuckle of the thumb or index finger, back of the hand, and back of the lower arm. Areas other than these mentioned are not acceptable and are not considered for venous access. As per CLSI (Clinical & Laboratory Standard Institute) guidelines, it is unacceptable to collect from the palmar surface (underside) of the wrist or the lateral wrist above the thumb up to mid forearm. If at any time you need to turn the hand over, so the palm is facing you, you are looking in an unacceptable area. Venipunctures must not take place in this area (underside of the wrist).

Using an alcohol pad, cleanse the area by moving the pad in a circular motion from the center of the vein site outward. The area must be allowed to dry. Never touch the skin after the site is cleansed unless you have prepared your gloved finger.

5. Perform the Venipuncture:

Evacuated Tube Method:

Grasp the patient's arm firmly, using your thumb to draw the skin taut. ("Specimen Collection Procedure - PERFORMING A VENIPUNCTURE | Akron ...") "C" hold is prohibited. The vein is entered with the bevel of the needle upward.

The tube should be filled until the vacuum is exhausted, and the blood flow ceases, to ensure a correct ratio of anticoagulant to blood. After each tube is drawn, those containing an additive should be mixed immediately by inverting the tube according to manufacturer's guidelines. Gentle inversion will prevent hemolysis. NEVER shake a tube of blood after collecting a blood specimen.

Syringe Method: To be used with the Safe T Wing Butterfly and the needle transfer device. A syringe can be used to collect blood from patients with more difficult veins. If the puncture has been made and the blood is not flowing, determine whether you are pulling too hard on the plunger and collapsing the vein. The needle should be drawn back while the plunger is being pulled slightly. Make sure that the bevel is covered by the skin. With the syringe in one hand, you can use the index finger of the other to feel for the vein. After the vein is relocated, keep your finger gently on the vein and guide the needle to that point. Then pull gently on the plunger. As soon as the blood starts to flow into the syringe, the needle (butterfly) should not be moved.

Other Method: Safety Butterfly with adapter

A winged infusion set with Luer adapters can be used instead of a syringe and needle for exceedingly difficult veins. The winged collection set is a closed system. Blood flows from the vein, through the set directly into a vacutainer tube.

Release the tourniquet as soon as blood appears in the first tube after the draw. Releasing the tourniquet allows for normal blood circulation and prevents adverse effects of certain analytes. Fold a gauze pad or place a cotton ball over the needle, then gently remove the needle **and engage the protective sheath over the needle by gently tapping on a solid surface. Never engage your hand or finger.** The gauze pad should be held firmly over the venipuncture site. Place a band-aid or paper tape over the gauze. Koflex is acceptable for patients on anticoagulants to maintain pressure. Instruct the patient to remove the koflex after 10 minutes.

- All tubes should be appropriately mixed.
- All tubes should be labelled using the labels from SoftLab while the patient is still in the phlebotomy chair.
- Scan the labelled tubes into the computer software as received.
- Place tubes in a biohazard bag.
- Dispose of contaminated materials and supplies in the designated biohazard containers.
- Remove gloves and dispose of them in waste basket.
- Discard tourniquet in waste basket.
- Wash hands after venipuncture, prior to the next patient.

6. Complications and Hazards of Venipuncture

All venipunctures cause trauma to the vessel wall because the inner layer of the vein is punctured and made rough by the needle. This causes cells and platelets to stick to the vein wall.

In rare cases, thrombosis and embolism may result if improper technique is used. Proper venipuncture techniques minimize the danger and make the procedure as safe and painless as possible for the patient.

Complications

Hematomas – probable causes are needle puncture through the vein, leakage of blood through the needle bevel, reapplying a tourniquet after an unsuccessful venipuncture, insufficient time spent in applying pressure after venipuncture, or sufficient time spent applying pressure after venipuncture.

Syncope (fainting) – to prevent, have patient lie down.

Continued Bleeding

Thrombosis – caused by injury to the inner layer of the vein.

Phlebitis – may occur because of poor venipuncture and pain can persist for months.

Cellulitis – inflammation of the cellular or connective tissue that spreads rapidly.

Hazards

- a. When using arm veins be cautious:

The median cephalic – crosses over the brachial artery; take care to avoid puncturing the artery; artery puncture usually causes extreme pain.

Excessively heavy arms – contain an excessive amount of superficial fascia; this increases the chances of cellulitis; aseptic technique is a “must.”

Avoid the Basilic vein – (least acceptable) remember to elevate the arm with pressure to prevent a hematoma if using this vein.

Avoid Veins located on the underside of the wrist. **This area is always prohibited. Damage to the structures lying just beneath the surface of the skin can occur. Hematoma, pain, and nerve damage can occur.**

- b. When using hand veins:

It can result in hematoma, if not performed with caution.

The gentle tapping employed to feel veins must be exceptionally gentle, never a sharp tap. Rupture of hand veins may occur by this tapping even before venipuncture, if done incorrectly. DO NOT attempt the underside of the wrist. This can cause damage to structures lying just beneath the surface of the skin. At any time, the hand is turned over, so the palm is facing you, STOP and search elsewhere.

c. General Precautions:

Observing sterile technique.

The venipuncture site provides a large subcutaneous opening through which bacteria may enter the body.

Before venipuncture, thorough cleansing of the skin is essential.

After cleansing, do not touch the area of intended venipuncture. If touching is necessary to relocate a vein, the cleansing must be repeated.

Only one venipuncture may be done with a sterile needle; after one use it must be discarded as it is no longer sterile.

Avoid venipunctures on the foot unless necessary and can only be accessed if it is written in the patient's chart. Avoid venipunctures in veins with varicosities and sluggish circulation. Use of such veins increases risk of phlebitis, thrombosis, and pulmonary embolism.

Tourniquet contamination – a potential germ carrier; tourniquets are discarded once used. Tourniquets are one time use only.

d. **Difficult Veins**

Edema – often conceals the veins; apply pressure on the area of a normally situated vein. This pushes the fluid temporarily out of the way, and the vein may become visible.

Blood flow stops during blood withdrawal:

Probable causes:

Patients may have low venous pressure.

Tourniquet stops the blood flowing to the heart at the tourniquet and above; suction from syringe draw or vacutainer causes the vein to collapse.

To attempt successful blood withdrawal:

Release tourniquet; if necessary, reapply after 5-10 seconds.

Re-adjust needle bevel.

Use syringe, not vacutainer, so that you can control the suction and keep it minimum.

Elderly patients with prominent veins but hematoma results with each venipuncture:

Probable causes:

Sclerosis of vein resulting in a narrow lumen.

High venous pressure.

To attempt successful blood withdrawal:

Do venipuncture without a tourniquet.

Use syringe, not vacutainer, if sclerosis is suspected.

Small veins with narrow lumen:

Probable causes:

Physical make-up for patients.

General debilitating condition of patient.

To attempt successful blood withdrawal:
Use syringe with 23g SAF T Wing butterfly attached; or
Use a 23g SAF T Wing butterfly; or use a 22g 1" needle attached to
vacutainer adapter.

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