



Capital Region[®]
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Owner: *Nitu Patel: Manager Clinical*

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References:

Capillary Blood Collection

Principles of the Procedure

Skin punctures provide capillary blood samples that are particularly useful for both adult and pediatric patients when small amounts of blood can be used for laboratory testing. Obtaining blood by venipuncture from infants may be difficult and potentially hazardous, and obtaining large quantities of blood, especially from premature infants, may result in anemia. It is also advantageous to obtain skin puncture blood specimens from adult patients. It is especially applicable for severely burned patients, extremely obese patients, patients with thrombotic tendencies, and geriatric patients whom have superficial veins that are inaccessible or very fragile. Blood specimens from all patients should be considered potentially infectious. Universal precautions must be practiced at all times.

Materials Required

- **Gloves:** Vinyl or non-latex disposable gloves with no powder are to be worn when performing phlebotomy. It is important that gloves are of the proper size so that you have better control of the lancet against the selected site.
- **Disposable safety lancets:** Skin puncture lancets are available in a variety of sizes. The selection of the appropriate lancet should be based on the lancet length and gauge.
 - 1.0mm Quikheel lancet (green) for newborns
 - 1.8mm lancet (pink) for children
 - 2.0mm lancet (blue) for adults
- **Microcontainer collection tubes**
- **Skin Preps:** Antiseptics are used to clean the venipuncture site to prevent chemical or microbiological contamination of the patient or the sample. For general use, 70% isopropyl alcohol preps are available.
- **Gauze:** Clean, dry 2" x 2" gauze sponges are used to wipe away the first drop of blood and to cover the site when completed.
- **Adhesive bandages or tape**
- **Biohazards Sharp Container:** Sharps containers are made of rigid plastic and are used as receptacles for biohazardous materials and other medical wastes.

Procedure

1. Approach and Greet Patient

- The phlebotomist identifies themselves to the patient and states their purpose using AIDET

(Acknowledge, Introduce, Duration, Explain, and Thank you). Sleeping patients must be awakened before proceeding with the capillary procedure.

2. Patient is Identified

- Patient identification is imperative. The phlebotomist must be certain that the specimen being drawn is from the correct person designated on the test request and/or labels.
- For inpatients, the ID band must be checked for 2 identifiers. The name must be checked along with either the date of birth, medical record number, or account number.
- If the patient does not have an armband, the phlebotomist must notify the nurse to obtain an armband and then wait to draw the patient until an armband is present.
- The patient is asked to state their name and date of birth and that information is checked on the requisition and/or labels.
- For outpatients, the patient must state their name and date of birth and that information must match the requisition and/or labels.
- For patients who are unable to speak, the phlebotomist must use another form of communication using writing, typing, or other text format.
- For situations in which a patient is unable to participate in the identification verification process we may do the following:
 - (1) ask the patient's health care professional, relative, or a friend to identify the patient by providing the name and date of birth,
 - (2) compare the information provided with the information on the requisition and/or labels and compare to the patient's identification band (if inpatient), and
 - (3) document the name of the individual who has identified the patient and either their title (if a health care professional) or relationship to the patient for their records.

3. Hands are Cleansed

- Hand washing is performed to prevent the spread of infection and disease to other patients, personnel, and visitors. Hand washing is the single most important means of preventing the spread of infections. Hand washing also protects the laboratory employee from blood and body fluid exposure. The phlebotomist will cleanse hands, using proper hand washing technique or using alcohol-based rub in accordance with CRMC Hand Washing Policy (PolicyStat ID: 8550708; Area: Infection Prevention and Control) upon entering the room or after escorting the patient to the phlebotomy chair if an outpatient.

4. Don Gloves

- Phlebotomist must put on proper fitting gloves before the capillary collection is performed. Gloves must remain intact during the capillary procedure. Fingertips of the gloves must not be removed.

5. Assess and position the patient

- Outpatients should be seated in a chair suitable for capillary puncture. In certain situations, the use of a bed, cot, or reclining chair may be appropriate for positioning the patient for collection. The chair should have arms to provide support and prevent falls if the patient loses consciousness. Chairs without arms do not provide adequate support for the arm or protect fainting patients from falls. Have the patient position their arm on the arm rest.

6. Select Site

- In infants less than one year old, punctures to the lateral or medial plantar surface of the heel are

generally performed. When puncturing an infant's heel, the site must be on the plantar surface medial to a line drawn posteriorly from the middle of the great toe to the heel, or lateral to a line drawn posteriorly from between the fourth and fifth toes to the heel.

- On children over one year old and adults, fingersticks may be performed. The puncture must be on the palmar surface of the distal segment of the middle or ring finger. Avoid the side or tip of the finger, as the tissue there is about half as thick as the tissue in the center of the finger. The puncture should occur across the fingerprints, not parallel to them.

7. Gather the supplies

- Select the correct lancet, alcohol, gauze, microcontainer tubes, and warming device (if needed).

8. Warm the area prior to puncture

- Warming the skin puncture site is recommended for microcollection samples to increase arteriolar blood flow to the site. This technique increases arterial blood flow to the site up to sevenfold, does not burn the skin, and does not result in significant changes for routinely tested analytes. A heel-warming device or a warm, moist towel, no warmer than 42°C may be used to cover the site for three to five minutes.

9. Cleansing the Site

- After cleansing the site, allow area to air dry. Residual alcohol causes rapid hemolysis, can have adverse effects on test results, and will cause discomfort to the patient. Iodine must not be used because blood contaminated with iodine may falsely elevate levels of potassium, phosphorus, and uric acid.

10. Skin puncture

- Remove the trigger lock from the selected lancet.
- Hold the device firmly between the fingers.
- Hold the patient's heel or finger firmly to prevent sudden movement.
- Place the lancet firmly against the skin, notify the patient of the imminent puncture, and activate the trigger.
- Wipe away the first drop of blood with a clean gauze.
- Position the collection container at the edge of the blood drop and allow the blood to flow into the container. Holding the puncture site downward and applying continuous pressure to the surrounding tissue enhances the blood flow. Milking of the finger or heel should not be performed, as this may cause hemolysis or contamination of the specimen with tissue fluid. If multiple specimens are to be collected, collect the EDTA (purple) first to assure adequate volume and accurate hematology results. Since this is not a venous blood draw, subsequent vials that are collected will NOT be contaminated with any additives.
- Gently tap the blood collection container to move the blood to the bottom of the container. This is essential for prevention of clot formation. When sufficient sample has been collected, cap the container and mix well by inverting 8-10 times.
- After blood is collected, place a clean gauze on the puncture site and elevate. Apply pressure until bleeding stops. Do not apply Band-Aids to infants or children under two. They can be a skin irritation and possibly a choking hazard.
- Place lancet in sharps container.

11. Specimen is labeled

- Specimen tubes must be labeled immediately after the phlebotomy and in the patient's presence.
- For each specimen, the laboratory requires the following information:
 - Patient's first and last name
 - patient-specific identifier (DOB, MRN)
 - collection date and time
 - identity of the person who collected the specimen
- Printed labels may be used, but smaller labels are helpful with the size of the microtainer.

12. Transport specimen to the laboratory as soon as possible after collection.

Patients for whom skin puncture may be inappropriate

- Dehydrated patient
- Peripheral edema (poor circulation)

Punctures must not be performed on:

- **Infants**
 - Posterior curvature of the heel
 - Central area of an infant's foot (area of the arch). This may result in injury to nerves, tendons, and cartilage.
 - Fingers of a newborn or infant less than one month old. The distance from skin surface to bone in the thickest portion of the last segment of each finger of newborn varies from 1.2 mm to 2.2 mm. With available lancets, the bone could easily be injured. In newborns, local infection and gangrene are potential complications.
 - Swollen site, because accumulated tissue fluid may contaminate the blood specimen.
 - Previous puncture sites.
 - Earlobes
- **Older children and adults**
 - Side of tip of the finger, as the tissue there is about half as thick as the tissue in the center of the finger.
 - Thumb because it has a pulse.
 - Index finger because it may be more sensitive and callused.
 - 5th finger because the tissue depth is insufficient to prevent bone injury.
 - Swollen or previously punctured site, because accumulated tissue fluid will contaminate the blood specimen.
 - Blood must not be obtained from fingers on the side affected by a mastectomy.

References

1. **Package Insert**, Microtainer Brand Safety Flow Lancet, Becton Dickinson Vacutainer Systems, Becton Dickinson and Co., Rutherford, NJ.
2. **NCCLS Vol.11 No. 11**,
3. **CLSI GP42-A6 Procedures and Devices for the Collection of Diagnostic Capillary Blood Specimens; Approved Standard—sixth edition. September 2008.**

Attachments

No Attachments

Approval Signatures

Step Description	Approver	Date
	Chad Linder: Pathologist	Jan 11, 2023
	Nitu Patel: Manager Clinical	Jan 11, 2023
	Kimberly Schrader: Core Lab Supervisor	Jan 11, 2023

Older Version Approval Signatures

	Chad Linder: Pathologist	Jan 11, 2021
	Dorothy Bayne: Director	Dec 17, 2020
	Gina Gramlich: Lab Supervisor	Dec 16, 2020