

## BLOOD COLLECTION GUIDELINES

### I. Patient Identification

#### A. Inpatient or Outpatient with Armband – Rover device not used

1. Ask the patient and, as needed the family, to state the patient's full name and date of birth.
2. Print labels in the electronic health record (EHR) using the Print Label task.
3. Take labels to the bedside. Compare two patient identifiers on the label with those on the patient's hospital armband.

**Note:** Do not collect the specimen until the patient is properly identified.

#### B. Inpatient or Outpatient with Armband – Laboratory with Rover device

1. Ask the patient and, as needed the family, to state the patient's full name and date of birth.
2. Select patient on the Rover device.
3. Compare patient's full name and medical record number (MRN) on their hospital armband with the information on Rover.

**Note:** If the patient does not have an armband, or the information on Rover does not match the armband, notify the patient's nurse or appropriate personnel. Do not collect the specimen until the patient is properly identified.

4. Using the Rover scanner, scan the patient's hospital armband.
  - a. Laboratory labels will print.
  - b. If a message is NOT displayed, patient identification is confirmed. If an error is displayed, the patient armband and orders do not match. In this case do not proceed with specimen collection until the patient identification issue is resolve.

#### C. Outpatient without Armband

1. Ask the patient, and as needed the family, to state the patient's full name and date of birth.

**Note:** Month must be stated as full month (Example: “July” rather than “7”.)

2. Compare verbal information to the information on the patient’s order (paper or computer).

## II. Venipuncture

### A. Venipuncture Materials

1. Needle holder and needles with safety device
2. Blood collection tubes. Common tubes include:
  - Plain red top tube (clot activator)
  - Lavender top tube (EDTA)
  - Pink top tube (EDTA)
  - Green or dark green top tube (lithium heparin)
  - Blue top tube (sodium citrate)
  - Gold top tube (serum separator / SST)
  - Red and black marble top tube (serum separator / SST)
3. Gauze pads
4. Alcohol preps
5. Tourniquet
6. Tape or bandages
7. Gloves

### B. Venipuncture Procedure

1. Review the laboratory orders to verify all required information is provided, to determine what tests have been ordered, and to check for any special instructions.
2. Identify the patient as described above.
3. Verify the patient’s fasting status or diet restrictions, as appropriate.
4. For inpatient infants and children administer analgesics such as sucrose solution and / or topical anesthetic per physician’s order. Provide comfort measures such as swaddling and a pacifier as appropriate.

5. Assemble the necessary materials and select tubes according to test orders. If not preassembled by manufacturer, thread the appropriate needle into the needle holder until it is secure.
6. Position the patient. Patient should be lying down or seated comfortably in an appropriate chair.
7. Apply tourniquet above the venipuncture site. Ask patient to make a fist without hand pumping action.

**Note:** Tourniquet application should not exceed one minute. If a tourniquet has been in place for more than one minute, release and reapply after two minutes.

8. Make vein selection. The preferred venipuncture site is the patient's arm. However, if the arms are not acceptable or available, veins on the back of the hand may be used. Veins on the underside of the wrist must **NOT** be used. Alternate sites, such as ankles or feet, are not recommended but may be used if accessed by a Licensed Independent Practitioner (LIP). (Exception: For inpatient neonates and infants, nurses may use alternate sites including leg, scalp and wrist veins without a physician's order.)
9. Cleanse the venipuncture site with an alcohol prep pad. Allow the area to air dry ensure proper disinfection and to prevent hemolysis of the specimen.
10. Remove the needle cover by pulling the cover straight away from the needle assembly without touching the needle itself.
11. Hold the patient's arm firmly below the intended puncture site. Use your thumb to pull the skin taut below the vein to anchor the vein.
12. Inform the patient that the venipuncture is about to occur.
13. Insert the needle (bevel up) into the vein at an angle of 30° or less.
14. Keeping the needle stable in the vein, push the first blood collection tube onto the needle until a resistance is felt. Blood will begin to flow if the vein has been punctured.
15. Once blood begins to flow, ask the patient to open fist.
16. When the first tube is filled, remove the tube from the needle holder. After drawing each tube, immediately mix the blood by gently inverting the tube.
17. If additional tubes are needed, insert additional tube(s) onto the needle using the correct order of draw.

18. Venipuncture Order of Draw:
  - Blood culture tube
  - Blue top tube
  - Plain red top tube
  - Red and black marble top tube or gold top tube
  - Green or dark green top tube
  - Lavender or pink top tube
  - Gray top tube
19. Release the tourniquet.
20. Remove the last tube from the needle before withdrawing the needle from the vein. Gently remove the needle from the arm. Immediately cover the puncture site with gauze, applying mild pressure to the site.
21. Activate the safety shield. For Eclipse needles, use your thumb to push the shield and cover the needle.
22. Dispose of needle and needle holder in proper rigid container. Do not reuse the needle or needle holder.
23. Continue applying mild pressure to the venipuncture site until bleeding stops. Patients may apply pressure as long as the collector monitors to ensure pressure is adequate.
24. Label all specimens in the presence of the patient. Do not leave the patient until all specimens have been properly labeled.
25. If laboratory computer labels are used to label the specimens, scan the specimen labels.
  - a. Laboratory personnel: Scan the label of **each** tube using the Rover scanner.
  - b. Nursing personnel: Use the Collect task in the EHR and scan the label of **each** tube.
  - c. Scanning the tubes documents the date and time of collection and the collector ID of the person signed on to Rover or the EHR. This information does not need to be written on the tubes.
26. If lab computer labels are not available, label specimens with the following information.
  - Patient's full name
  - Second patient identifier (CSN, MRN, date of birth)
  - Date and time of collection
  - Collector identification (employee number preferred)

27. Check the patient's arm at the puncture site for bleeding. If bleeding continues, maintain pressure until bleedings stops.
28. When bleeding ceases, apply an adhesive or gauze bandage over the venipuncture site if patient wishes.
29. Transport blood collection tubes to the laboratory in a timely manner. If the specimen is transported in a plastic bag, separate the blood tubes from any paperwork by placing the paperwork in a side pouch and the specimen in the ziplock pouch.

C. Venipuncture Procedure Notes:

1. A needle holder with a safety needle is the preferred collection device. Venipuncture in small veins may be facilitated by use of a syringe or butterfly needle. Fingerstick is also an alternative.
2. Do not pre-label blood tubes. If blood is not obtained on the patient, the tubes could be mistakenly used on a different patient.
3. Blood should not be collected above or beside an IV. The specimens may be contaminated with intravenous fluid, resulting in inaccurate test results.

**Note:** If no alternative site is available, the nursing staff may temporarily turn off the IV. The IV must be turned off a minimum of two minutes before collecting the specimen. If heparin IV, turn off a minimum of 5 minutes. It should be noted on the requisition and in the laboratory computer that the specimen was collected from an arm with IV.

4. When blood cannot be obtained, possible actions include:
  - a. Change position of needle.
  - b. Try another tube to ensure the first tube used is not defective.
  - c. Find another person to attempt blood draw. No more than two attempts should be made by one person.

III. Fingerstick

A. Fingerstick Materials

1. Automated skin puncture device
2. Microtainer tubes – Common tubes include:

- Red top tubes
  - Green top tubes (Lithium heparin)
  - Lavender top tubes (EDTA)
  - Amber tube with yellow top (Bilirubin testing)
3. Alcohol preps
  4. Gauze pads
  5. Warming device (optional)

B. Fingertick Procedure

1. Review the laboratory orders to verify all required information is provided, to determine what tests have been ordered, and to check for any special instructions.
2. Identify the patient as described above.
3. Verify the patient's fasting status or diet restrictions, as appropriate.
4. For inpatient children administer analgesics such as sucrose solution and / or topical anesthetic per physician's order. Provide comfort measures such as swaddling and a pacifier as appropriate.
5. Assemble the necessary materials and select tubes according to test orders.
6. Position the patient. Patient should be sitting or lying down and patient should hold hand in downward position.
7. Select puncture site.
  - The puncture site should be on the palmar surface of the finger, not the tip or the side, and across the fingerprint.
  - The middle finger and the ring finger are the preferred sites. Do not use the fifth finger.
8. Cleanse the puncture site with alcohol prep and allow to air dry.
9. Remove the skin puncture device from packaging. Remove or release the trigger lock feature on the device.
10. Hold the patient's finger firmly to prevent any sudden movement.
11. Position the device against the selected site and notify the patient and/or person assisting with patient of the imminent puncture. The puncture should be made across the fingerprints, not parallel to them.

12. Activate the release mechanism on the device.
13. Remove the device and discard in a sharps container.
14. Using dry gauze, wipe away the first drop of blood, making sure the area is completely dry.
15. Apply gentle intermittent pressure below the puncture site to obtain blood. Touch the Microtainer tube to the drop of blood and allow the blood to flow into the tube. Do NOT scoop or scrape blood from the finger as it may cause hemolysis or dilute the specimen with tissue fluid.
16. Release pressure to allow re-circulation of blood.
17. Repeat steps 15 and 16 until an adequate amount of blood is obtained in the tube. Observe minimum and maximum fill lines on Microtainer tube.
18. Seal the tube with the original cap and invert immediately 8 to 10 times.
19. If multiple tubes are required, collect additional tubes using the correct order of draw.
20. Capillary Collection Order of Draw:
  - Lavender top tube
  - All other tubes with additives
  - Red top tube
21. Apply clean gauze to the puncture site using slight pressure until the bleeding stops.
22. Label the tubes and transport the specimens per procedure provided in the Venipuncture section.

C. Fingertick Procedure Notes:

1. The fingertick procedure is not recommended for newborns or infants less than one-year-old.
2. The fingertick procedure is not acceptable for all tests. These include coagulation tests, blood cultures, tests requiring a large volume of blood, and tests that require anticoagulants not available in Microtainer tubes. If you are unsure, consult with a laboratory supervisor prior to collection.
3. Warming the puncture site can increase blood flow to the site. A warming device or moist towel, with temperature no higher than 42 C may be applied for 3 to 5 minutes.

4. If the alcohol and first drop of blood are not wiped from the finger, hemolysis may occur.
5. Do not massage or squeeze the finger too tightly as this may cause hemolysis and / or contamination of specimen with tissue fluid.

#### IV. Heelstick

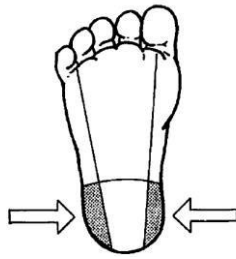
##### A. Materials

1. Spring-loaded lancet device - If the infant is less than four pounds use a preemie spring-loaded lancet.
2. Microtainer tubes (see above)
3. Alcohol preps
4. Gauze sponge
5. Heat warmer (optional)

##### B. Procedure

1. Review the laboratory orders to verify all required information is provided, to determine what tests have been ordered, and to check for any special instructions.
2. Identify the patient as described above.
3. Verify the patient's fasting status or diet restrictions, as appropriate.
4. For inpatient infants and children administer analgesics such as sucrose solution and / or topical anesthetic per physician's order. Provide comfort measures such as swaddling and a pacifier (if the infant is breastfeeding, the pacifier should not be left with newborns less than four weeks of age) as appropriate.
5. Assemble the necessary supplies and tubes according to test orders.
6. Position the patient.
7. Select the puncture site. The most medial or lateral sections of the bottom of the infant's heel should be used. Do **not** use previously punctured sites. The shaded areas indicated by the arrows represent the recommended areas for infant heelstick.





8. A heel warmer may be used to warm the baby's heel prior to performing the heelstick to increase blood flow. Apply to puncture site 3 to 5 minutes.
9. Clean the heel with alcohol prep and allow to air dry.
10. Remove skin puncture device from packaging. Remove or release the trigger lock feature on the device.
11. **Infant:** Grasp the foot firmly with the thumb and index finger wrapped around heel. Apply gentle pressure to heel in an upward direction to drive the blood to the puncture site. Release pressure periodically to allow blood to continue to build and flow.

**Neonate:** Position hand with fingers along the calf and thumb at ball of foot to stabilize. Apply pressure along the calf toward the heel. Release pressure to allow capillaries to refill.



12. Position the device against the selected site. The puncture should be across the print marks, rather than parallel to them.
13. Activate the release mechanism on the device.
14. Remove the device and discard in a sharps container.
15. Using clean gauze, wipe away the first drop of blood, making sure the area is completely dry.
16. **Infants:** Hold puncture site in dependent position while gently applying intermittent pressure to surrounding area.

**Neonates:** Apply pressure along calf toward heel. Release pressure to allow capillaries to refill.

17. Continue to apply pressure and release as described above. Touch the Microtainer tube to the drop of blood and allow the blood to flow into tube until an adequate amount of blood is obtained. Observe minimum and maximum fill lines on the Microtainer tubes.

**Note:** Do NOT scoop or scrape blood from the heel as this may cause hemolysis or dilute the specimen with tissue fluid.

18. Seal the tube with the original cap and invert immediately 8 to 10 times.
19. If multiple tubes are required, collect the additional tubes using the correct order of draw for capillary specimens (see Fingerstick section above).
20. When blood collection is complete, apply slight pressure to the heel with clean gauze pressed against the puncture site and elevate the foot above the body until the bleeding stops.
21. Label the tubes and transport the specimen per procedure provided in the Venipuncture section.

C. Heelstick Procedure Notes:

1. The heelstick procedure is not acceptable for all tests. These include coagulation tests, blood cultures, tests requiring a large volume of blood, and tests that require anticoagulants not available in Microtainer tubes. If you are unsure, consult with a laboratory supervisor prior to collection.
2. If the alcohol and first drop of blood are not wiped from the heel, hemolysis may occur.
3. Do not massage or squeeze the heel too tightly as this may cause hemolysis and / or contamination of specimen with tissue fluid.
4. Do not use the central portion of the foot (area of the arch), as punctures to this area may result in injury to nerves, tendons, and cartilage.

Per Policy "Blood Collection" M03 05 074 Revised: 6/22

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Date: 6/22