BLOOD COLLECTION GUIDELINES

I. Patient Identification

A. Inpatient / Outpatient with armband

1. When possible, ask patient to state their name full name.

2. Check the patient’s hospital identification armband. Compare patient’s full name and CSN number on the armband with the name and CSN number on the laboratory order or labels.

   Note: If the patient does not have an armband, or the information on the armband and order / labels do not match, notify the patient's nurse or other appropriate personnel. Do not draw blood specimen until the patient is properly banded.

3. If laboratory labels are available at time of collection, confirm patient identification using the Epic barcode system.
   a. In Epic, click on Patient Lists.
   b. Barcode scan the patient's armband. A tab for the patient will open.
   c. Barcode scan all of the patient’s laboratory labels for that blood draw.
   d. If a message is NOT displayed, patient identification is confirmed. If a message 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.

B. Outpatient without armband

1. Have the patient or family 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 provided on the patient’s paperwork (face sheet, labels, order, etc.).

II. Venipuncture

A. Venipuncture Materials

1. Needle holder with safety needle
2. Blood collection tubes. Common tubes include:
   a. Plain red top tube (clot activator)
   b. Lavender top tube (EDTA)
   c. Pink top tube (EDTA)
   d. Green top tube (lithium heparin)
   e. Blue top tube (sodium citrate)
   f. Gold top tube (serum separator / SST)
   g. 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 test requisition to verify all required information is provided, to determine what tests have been ordered, and to check for any special instructions.

2. As you enter the patient room, sanitize your hands. Refer to system Hand Hygiene policy (S11 00 356).

3. Put on gloves.

4. Identify the patient as described above.

5. Verify the patient’s fasting status or diet restrictions, as appropriate.

6. 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.

7. 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.

8. Position the patient. Patient should be lying down or seated comfortably in an appropriate chair.

9. 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.

10. 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, may only be used with physician approval. (Exception: For inpatient neonates and infants, nurses may use alternate sites including leg, scalp and wrist veins without a physician's order.)

11. Cleanse the venipuncture site with an alcohol prep pad. Allow the area to air dry to prevent hemolysis of the specimens.

12. Remove the needle cover by pulling the cover straight away from the needle assembly without touching the needle itself.

13. 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.

14. Inform the patient that the venipuncture is about to occur.

15. Insert the needle (bevel up) into the vein at an angle of 30° or less.

16. 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.

17. Once blood begins to flow, ask the patient to open fist.

18. 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.

19. If additional tubes are needed, insert additional tube(s) onto the needle using the correct order of draw.

20. Venipuncture Order of Draw:

   a. Blood culture tube
   b. Blue top tube
   c. Plain red top tube
   d. Red and black marble top tube or gold top tube
   e. Green top tube
   f. Lavender or pink top tube
   g. Gray top tube
20. Release the tourniquet.

21. 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.

22. Using a solid surface, snap the protective cover onto the needle by pressing it against the solid surface.

23. Dispose of needle and needle holder in proper rigid container. Do not reuse the needle or needle holder.

24. 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.

25. Label all specimens in the presence of the patient. Do not leave the patient until all specimens have been properly labeled.

   a. If laboratory computer labels are available place labels on the tube. Write the date and time of collection and collector identification (employee number preferred) on each tube.

   b. Patient labels generated by Epic may be used to label specimens. Write date and time of collection and collector identification (employee number preferred) on each tube.

   c. If computer labels are not available, label specimens with the following information.

      - Patient’s full name
      - Second patient identifier (CSN number or date of birth)
      - Date and time of collection
      - Collector identification (employee number preferred)

**Notes:**

Refer to M03 05 071 Blood Bank Identification Bands / Blood Bank Specimen Collection procedure for additional information on Blood Bank specimen labeling.

26. Write the date and time of collection and collector identification on the laboratory requisitions / labels.

27. Check the patient’s arm at the puncture site for bleeding. If bleeding continues, maintain pressure until bleeding stops.

28. When bleeding ceases, apply an adhesive or gauze bandage over the venipuncture site if patient wishes.
29. Transport blood collection tubes with laboratory requisitions/labels in a timely manner. If the specimen is transported in a plastic bag, separate the blood tubes from the 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 may be mistakenly used on a different patient.

3. Blood should not be collected above or beside an IV. The specimen collected could 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. 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 action 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 that two attempts should be made by one person.

III. Fingerstick

A. Fingerstick Materials

1. Automated skin puncture device

2. Microtainer tubes – Common tubes include:
   a. Red top tubes
   b. Green top tubes (Lithium heparin)
   c. Lavender top tubes (EDTA)
   d. Amber tube with yellow top (Bilirubin testing)

3. Alcohol preps

4. Gauze pads
5. Warming device (optional)

B. Fingerstick Procedure

1. Prior to entering patient room, review the test requisition to verify all required information is provided, to determine what tests have been ordered, and to check for any special instructions.

2. As you enter the patient room, sanitize your hands. Refer to system Hand Hygiene policy (S11 00 356).

3. Put on gloves.

4. Identify the patient as described above.

5. Verify the patient’s fasting status or diet restrictions, as appropriate.

6. 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.

7. Assemble the necessary materials and select tubes according to test orders.

8. Position the patient.

9. Select puncture site.

   a. The puncture site should be on the palmar surface of the finger, not the tip or the side and across the fingerprint.

   b. The middle finger and the ring finger are the preferred sites.

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 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 for tests. If multiple tubes are required, collect additional tubes using the correct order of draw.

18. Capillary Collection Order of Draw:

   a. Lavender top tube
   b. All other tubes with additives
   c. Red top tube

19. Observe minimum and maximum fill lines on Microtainer tubes. Seal each tube with the appropriate colored cap and invert immediately 8 to 10 times.

20. Apply clean gauze to the puncture site using slight pressure until the bleeding stops.

21. Label the tubes, complete the requisition, and transport the specimens per procedure provided in the Venipuncture section.

C. Fingerstick Procedure Notes:

1. The fingerstick procedure is not recommended for newborns or infants less than one year old.

2. Microtainer tubes are not available for all tubes; therefore, some specimens cannot be collected by this method.

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 collected 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. Heelstick 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. Heal warmer (optional)

B. Heelstick Procedure

1. Prior to entering patient room, review the test requisition to verify all required information is provided, to determine what tests have been ordered, and to check for any special instructions.

2. As you enter the patient room, sanitize your hands. Refer to system Hand Hygiene policy (S11 00 356).

3. Put on gloves.

4. Identify the patient as described above.

5. Verify the patient’s fasting status or diet restrictions, as appropriate.

6. 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 given to newborns less than four weeks of age) as appropriate.

7. Assemble the necessary supplies and tubes according to test orders.

8. Position the patient.

9. 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.

10. 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.

11. 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.
12. Clean the heel with alcohol prep and allow to air dry.

13. Remove skin puncture device from packaging. Remove or release the trigger lock feature on the device.

14. **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.

15. Position the device against the selected site. The puncture should be across the print marks, rather than parallel to them.

16. Activate the release mechanism on the device.

17. Remove the device and discard in a sharps container.

18. Using clean gauze, wipe away the first drop of blood, making sure the area is completely dry.

19. **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.

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

21. If multiple tubes are required, collect the additional tubes using the correct order of draw for capillary specimens (See fingerstick section above).

22. Observe minimum and maximum fill lines on the Microtainer tubes. Seal each tube with the appropriate colored cap and invert immediately 8 to 10 times.
23. When blood collection is completed, 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.

24. Label the tubes, complete the requisitions, and transport the specimen per procedure provided in the Venipuncture section.

C. Heelstick Procedure Notes:

1. Microtainer tubes are not available for all tubes; therefore, some specimens cannot be collected by this method.

2. If the alcohol and first drop of collected 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.