

Patient Identification

Proper patient identification and specimen labeling are crucial to ensure that specimens match the individual indicated on the Request Form. The responsibility for correct identification lies with the individual collecting the specimen.

How to Correctly Identify Patients and Label Specimens:

- **Patient Confirmation:** Ask the patient to provide their full name, and date of birth. Compare this information with the details on the Request Form and/or the patient's identification bracelet.

Special circumstances:

- **Incommunicative Patients:** If the patient cannot communicate their identity, ask a nurse/member of clinical staff or patient representative/caretaker to identify the patient.
- **Inpatients:** If a hospital identification bracelet is missing, request one from the nurse, even if it must be handwritten (including the patient's name, hospital number, and date of birth). The nurse will identify and place an identification band on the patient. **Do not collect specimen unless this requirement is met.**
- **Unidentified Emergency Patients:** Follow the identification standards established by the American Association of Blood Banks:
 - The patient must be positively identified when the blood specimen is collected.
 - Assign a temporary but clear designation to the unidentified emergency patient until positive identification can be made.
 - Attach the name and hospital number of the emergency identification to the patient's body, either by wristband or a similar device.

Procedure for Venipuncture

- **Hand Hygiene:** Wash hands thoroughly before phlebotomy and between patients.
- **Verify Restrictions:** Verify patient fasting status and/or any special instructions required. Special instructions for certain tests may be noted in the test order or in the laboratory handbook.
- **Select Site:** Choose a venipuncture site. **Do not draw blood from a site with a hematoma.**
- **Apply Tourniquet:** Apply the tourniquet and palpate the vein to determine its adequacy for the blood draw.
Note: Prolonged tourniquet application may produce erroneous test results. Do not leave the tourniquet on the patient's arm longer than 1 minute and do not allow the patient to "pump" their hand.
- **Cleanse Skin:** Wearing gloves, cleanse the skin with an alcohol pad using a circular motion from the center to the periphery.
Note: For blood alcohol collection, do not use an alcohol pad. Use a povidone-iodine prep instead. Avoid swabs or ampules containing iodine tinctures, as these contain alcohol.
- **Air Dry:** Allow the skin to air dry to avoid hemolysis and prevent the patient from experiencing a burning sensation during venipuncture. If the site must be touched again, re-cleansing is necessary.
- **Anchor Vein:** Hold the patient's arm firmly using the thumb to pull the skin taut to anchor the vein. The thumb should be 1–2 inches below the venipuncture site.
- **Insert Needle:** With the bevel up, puncture the vein with the needle at an angle of 30 degrees or less. Keep the needle stable in the vein and connect the first tube.
- **Release Tourniquet:** Remove the tourniquet as soon as blood flow is established.

- **Order of Draw:** Follow this order when drawing multiple samples:
 1. Blood culture bottle(s)
 2. Coagulation tube (Blue top, sodium citrate)
 3. Serum tube with or without clot activator, with or without gel (i.e., Gold top tube)
 4. Heparin tube (Green top)
 5. EDTA tube (Lavender top)
 6. Glycolytic inhibitor (Gray top, oxalate-fluoride tube)
 7. Other additive tubes

Special instructions: The discard tube must be a glass (no additive) or coagulation tube.

Exceptions to Order of Draw:

- No additive serum tubes may be drawn before the coagulation tube.
- If only a coagulation blue top tube is drawn for routine PT or APTT testing, a discard tube is not required if a regular (straight) blood collection needle is used.
- When using a winged blood collection set with a coagulation tube as the first tube, draw a discard tube first to fill the blood collection tubing dead space. The discard tube must be a glass (no additive) or a coagulation tube.
- **Fill Tubes:** Fill the tube until blood flow ceases to ensure correct blood to anticoagulant ratios and an adequate specimen amount. Some volumes are expressed as serum. Draw whole blood in an amount 2.5 times the required volume of serum to ensure an adequate amount of serum can be obtained after processing.
Note: Blue top coagulation tubes must always be completely filled.
- **Mix Additive Tubes:** Mix the additive tubes immediately after collection by gentle inversion 8–10 times.
- **Post-Venipuncture:** Place a gauze pad over the venipuncture site, apply light pressure, remove the needle from the vein, and activate the safety mechanism.
- **Check Bleeding:** After applying mild pressure, ensure that bleeding has ceased. Apply a bandage and instruct the patient to leave it on for 15 minutes.
Note: Continue applying pressure with a gauze pad as necessary to stop the bleeding.
- **Dispose of Sharps:** Dispose of needles, syringes, and disposable Vacutainer® holders in a sharps container.
- **Label Tubes:** Hand label tubes or place ID labels on the tubes. Refer to SPECIMEN LABELING, page 5, for more information.

Supplies and Procedure for Blood Culture Collection

Supplies:

- Gloves
- Winged blood collection set and holder
- Alcohol preps
- Povidone-iodine preps or iodine tincture ampules
- BacT/ALERT® blood culture bottles
- Gauze
- Tourniquet

(For allergic patients, a second alcohol prep can be substituted for iodine.)

Procedure:

1. Prepare Blood Culture Bottles:

- Remove the metal flip caps of one aerobic and one anaerobic BacT/ALERT blood culture bottle.

- Disinfect each bottle with an alcohol prep pad and allow to air dry.

2. Locate and Cleanse Venipuncture Site:

- Wear gloves and locate the venipuncture site.
- Cleanse the site with an alcohol prep pad for 30 seconds. Allow it to dry unaided. DO NOT fan or blow dry.
- Cleanse the site with povidone-iodine or iodine tincture, starting at the point of projected needle insertion and moving in an ever-increasing circular pattern of 1.5 to 2 inches. Allow to dry unaided for 60 seconds. DO NOT fan or blow dry.
- **For patients with iodine hypersensitivity**, skip the iodine step. Instead, cleanse the site with a new alcohol prep pad, scrubbing for 60 seconds and allowing the area to air dry unaided prior to venipuncture.

3. Apply Tourniquet:

- Apply a tourniquet proximal to the point of venous entry. The venipuncture site must not be palpated following disinfection.

4. Perform Venipuncture:

- The volume of blood collected is critical. Fill lines are included on each blood culture bottle.
 - For adult draws, inoculate each bottle (aerobic followed by anaerobic) with 10 mL of blood.
 - For pediatric or difficult adult draws, inoculate **only** the aerobic bottle with at least 1, but no more than 10 mL of blood. Note: NICU specimens can be as little as 1 to 3 mL of blood depending on the weight of the neonate.

Refer to the chart “Minimum Specimen Requirements for Newborn/Pediatric or Adult Difficult Draw Patients.” For further guidance on the volume of blood to draw for pediatric or neonate draws, please call 877-402-4221.

5. Label Bottles:

- Label the bottles with a patient label placed in the blank area on the bottle manufacturer label. Do not cover the barcodes.

6. Cleanse Venipuncture Site:

- Cleanse the venipuncture site with an alcohol prep pad to remove any remaining iodine.
- Apply a bandage.

7. Transport Specimens:

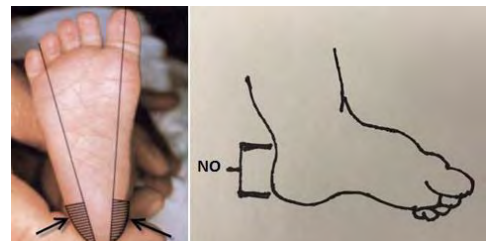
- Transport specimens to the laboratory at room temperature. **Do not refrigerate.**

Procedure for Skin Puncture and Blood Collection from Infants

A limited number of test procedures can be performed using micro blood samples, typically requiring collection ranging from 0.1-0.6 mL (100-600 uL). In newborns, due to potentially elevated hematocrit levels, the whole blood sample collected may need to be three times the actual test sample requirement to yield an adequate volume of serum for testing. (Refer to the “Pediatric Specimen Collection Guide” linked from the HNL Lab Handbook.)

Appropriate Sites for Skin Puncture

- Lateral or medial plantar heel surface (see illustration)
- Plantar surface of the big toe (do not use for newborns)
- Palmar surface of the last segment of the finger (do not use for newborns)



Precautions for Skin Puncture

- The skin puncture site must not be edematous to avoid contamination by tissue fluid.
- For heel punctures, avoid the posterior curvature of the heel or central area of the foot.
- To prevent infection, do not puncture through a previous puncture site.

- If necessary, cover the heel with a warm towel or infant heel warmer for three minutes prior to collection to enhance blood flow.
- Wearing gloves, thoroughly cleanse the puncture site with a sterile alcohol prep pad. Allow the alcohol to evaporate by air drying before puncturing the skin to prevent rapid hemolysis of the specimen.
- Hold the infant's foot gently but firmly by placing all fingers around the ankle and your thumb over the arch of the foot almost making a full circle around the heel and apply gentle pressure. Use a BD Microtainer® QuikHeel™ lancet or another approved device. Place the QuikHeel device firmly against the site on the heel and press the trigger. A straight-line incision will be made.
- Wipe away the first drop of blood (which may contain tissue fluid) with a dry gauze pad before beginning the actual blood collection.
- Collect the specimen using appropriate containers. Enhance blood flow by holding the puncture site downward and applying gentle, continuous pressure to the surrounding area.

Note: Strong repetitive pressure (i.e., milking) may cause hemolysis, contamination with tissue fluid, and blood clotting.

Order of Draw for Multiple Microtainer Samples

- EDTA (Lavender Microtainer®)
- Heparin (Green Microtainer®)
- Serum with clot activator, with or without gel separator (Yellow Microtainer®)
- Serum non-additive (Red Microtainer®)

Specimen Collection Instructions for Pennsylvania Department of Health Newborn Screening (Filter Paper Form)

- Prior to obtaining the specimen, properly complete the filter paper form with all requested information.
Note: Patient date and time of birth, specimen draw date, and time are mandatory fields. Failure to provide this information will result in an unacceptable specimen requiring recollection.
- Collect the specimen directly onto the filter paper form. Do not collect in capillary tubes and transfer to the form.
- Wipe away the first drop of blood with a dry gauze pad.
- Allow a large drop of blood to form and touch the drop to the center of each printed circle on the form.
- Allow blood to saturate the circle so that the white portion within each circle is no longer visible on the front and back sides of the paper.

Note: A single large drop of blood should be used to saturate each filter paper circle. Avoid layering blood drops on the paper.

- Repeat the procedure for all circles on the filter paper form. Avoid touching or handling the filter paper in the circled collection areas.
- Allow the collected filter paper forms to air dry horizontally for at least 3 hours at room temperature, away from direct sunlight.
- Place filter paper in a biohazard specimen bag and deliver immediately to the laboratory.

Specimen Labeling

Careful labeling is vital for accurate results. Follow these guidelines to ensure proper specimen labeling:

1. Timing of Labeling:

- Never label tubes/containers prior to collection.
- All specimens must be labeled before leaving the patient's side.

2. Label Information:

- Proper labeling includes either HNL Lab Medicine’s computer-generated labels or hand-labeled tubes with the following information:
 - Patient Full Name
 - Date of Birth and/or Social Security Number
 - Date and Time of Collection
 - Initials or Tech Code of the person collecting the specimen
 - Site of venipuncture (for blood culture specimens only)
 - Specimen type (for aliquots) or specimen source (body site) for other laboratory specimens (cytology, pathology, microbiology)

Note: If using HNL Lab Medicine’s computer-generated label, the phlebotomist’s initials and the actual time of collection must be handwritten on the label. If utilizing bedside barcode labeling workflows, collector information and time of collection should be entered in the electronic medical record.

3. Essential Labeling for Blood Bank Specimens:

- All outpatient Blood Bank specimens must include:
 - The patient’s full name
 - Either the medical record number or social security number and date of birth
- All specimens must include:
 - Date and Time of Collection
 - Initials or Tech Code of the person collecting the specimen

Specimen Processing and Transport

When processing specimens, adhere to the following guidelines:

Serum: Place the tube in an upright position and allow the blood to clot for a minimum of 30 minutes (but no longer than 1 hour).

Plasma: Centrifuge immediately upon receipt or after drawing.

Process Instructions:

1. Leaving the tube stopper on, centrifuge either specimen type at approximately 3000 rpm for 15 minutes.
Note: Some analytes require very specific handling. Always consult the HNL Lab Handbook prior to processing.
2. When using a benchtop centrifuge, use a balance tube of the same type containing an equivalent volume of water.
3. Allow the centrifuge to come to a complete stop. NEVER stop it by hand or with a rake.
4. Carefully remove the tube from the centrifuge without disturbing the contents.
5. When indicated, transfer the serum or plasma into an appropriately labeled plastic aliquot tube.

Transport Instructions:

- **Temperature Maintenance:** It is vital to maintain specimens at the proper temperature to ensure specimen integrity. For tests without specific storage requirements noted under the alphabetical test listing, specimens should be refrigerated until transport.

Temperature Definitions:

Room temperature: 15° to 30° C

Refrigerated: 2° to 8° C

Frozen: -20° to 0° C

Frozen Specimen Requirements:

- Process, aliquot, and freeze the specimen as soon as possible.
- Always freeze the specimen in appropriately labeled plastic aliquot tubes, available from the laboratory.

- Submit one plastic aliquot tube for each test. If multiple tests are submitted on one frozen aliquot, HNL Lab Medicine cannot guarantee that all requested testing can be completed.
- Frozen specimens must be transported in a frozen state. Never transport frozen specimens without dry ice.
- Specimens, when ready for transport, should be completely inserted into the dry ice. Indicate to the HNL Lab Medicine courier which specimens must be transported frozen.
- Frozen specimens that have thawed cannot be refrozen and are unacceptable for analysis.

Packaging:

1. Place each blood collection vial, leak-proof aliquot tube, or primary specimen container in a zip lock specimen transport bag available from HNL Lab Medicine. These bags are double-pouched and biohazard labeled.
2. Place the specimen in the sealable compartment and the completed requisition slip in the outer pouch to prevent contamination.
3. Ensure that containers and bags are properly sealed to avoid spills.

Transporting Frozen Specimens:

- Transport the frozen, aliquoted specimens surrounded by an adequate amount of dry ice. Specimens must arrive at the laboratory in a frozen state. Previously frozen specimens that have thawed during transport are unacceptable for testing.

Specimen Rejection

Specimens received in the laboratory may be rejected for any of the following reasons. No specimen will be rejected until appropriate efforts have been made to correct the problem.

Reasons for Specimen Rejection:

1. Labeling Issues:

- Specimen received without a label or with improper identification will be rejected.
- Unlabeled/mislabeled pathology/cytology specimens will be returned to the physician’s office/client for correction. In addition to patient demographics, the specimen source (body site) must be clearly defined and match on both the specimen container and requisition.
- Note: If your collection facility is located at or near an HNL Lab Medicine Acute Care or testing laboratory, specimen identification may be requested in person.

2. Questionable Integrity:

- Incorrect transport container
- Insufficient volume
- Hemolysis (depending on tests ordered)
- Improper handling or storage of specimen
- Clotted specimen (depending on tests ordered)

Notification: The client will be notified as soon as possible if the specimen is unacceptable for any of the above reasons.

Specimen Retention/Test Additions

Except for unstable specimens (e.g., those for cultures, CBCs, urinalysis), HNL Lab Medicine retains most specimens for several days.

Adding Tests or Requesting Repeat Assays:

1. Contact Information:

- A representative can arrange for additional testing if sufficient specimen volume remains after the initial tests are completed. If a test is to be added to a specimen already in the laboratory or if a repeat assay is requested, please contact Customer Care at 877-402-4221.

2. Written Authorization:

- Federal regulations require written authorization for every test performed within 30 days of a verbal request.
- You will be asked to forward a signed order via fax or mail for all verbal requests.