SPECIMEN LABELING AND HANDLING

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• Labeling Requirements

Proper specimen collection, handling, labeling and transport are essential for accurate laboratory results. The Joint Commission and the College of American Pathologists (CAP) have designated patient safety goals and requirements that are redefined annually. Their number one goal is to ensure **positive patient and specimen identification.** They require that at least two patient identifiers (neither being the patient's location) be used to label specimen collection containers in the presence of the patient. The use of two patient identifiers on all specimens will ensure accurate linkage of the patient, the specimen, and the test results.

Please follow the instructions below carefully. If there is any question concerning the proper collection or labeling technique, please call the laboratory at 513-569-6345 or 513-569-6344.

To prevent the possibility of an adverse patient outcome resulting from a specimen mix-up or misidentification, **label all blood tubes and other specimen containers at the patient's side with the patient's:**

- **COMPLETE first and last names** (no initials or nicknames)
- **Date of birth or MRN.** If using an MRN on a label, it must also be present on the laboratory requisition.
- **Date and time of collection**

➢ ***The name on the tubes must EXACTLY match the name on the requisition.***

➢ ***Use a separate transport bag for each patient's specimens and requisitions. Do not combine several patients' specimens into one bag.***

IMPORTANT

Label all specimens for Blood Bank with:

- **COMPLETE first and last names** (no initials or nicknames)
- **Date of birth**
- **Date and time of collection**
- **Your initials** (if the potential to transfuse exists)

- ## Policy for Mislabeled Specimens

  TriHealth Laboratory Services cannot accept unlabeled or mislabeled samples. Recollection of the specimen will be required. This includes samples labeled with a patient's name but without a date of birth or other second identifier.

  Mislabeled, unlabeled, or incompletely labeled specimens present potential serious harm to patients. Labeling errors can lead to possible serious misinterpretation of test results when specimens with similar identifying information enter an environment where thousands of specimens are handled each day and results must be accurately associated with your patient among the many.

- ## Centrifugation of Serum Separator Tubes

  Serum specimens are obtained from blood drawn into tubes with no anticoagulants. The special gel at the bottom of the serum separator tube will form an effective barrier between the serum and the cells. Improper handling or centrifuging of serum separator tubes can cause falsely elevated potassium results, as well as other inaccurate measurements. Immediately following venipucture:

  1. Invert the specimen at least 5 times.
  2. Place the tube in a vertical position for a minimum 30 minutes (maximum of 2 hours).
  3. Centrifuge the specimen for 15 minutes in a fixed rotor (usually slant) centrifuge or for 10 minutes in a horizontal spin centrifuge.
  4. Allow the specimen to remain at room temperature until the lab courier arrives.

  Note: Once the gel barrier has formed, never recentrifuge the tube.

- ## 24-Hour Urine Collections

  Containers for 24-hour urine are available from the laboratory. See 24-Hour Urine Collections for a list of collection steps to be followed by the patient.

- ## Plasma Specimens

  Plasma specimens are obtained from blood drawn into tubes containing anticoagulants, such as heparin, EDTA, or sodium citrate. These tubes must be gently inverted to ensure complete mixing of the blood with the anticoagulant. Mixing must be done **immediately** after the blood has entered the tube. Clotted specimens are not acceptable for testing.

- ## Hemolysis and Lipemia

  Hemolysis is a condition that may affect the results of various laboratory tests. Hemolysis is the release of hemoglobin from the red cells and is indicated by a pink, orange, or reddish tint of the serum. Hemolysis may occur internally in a patient as a result of various disorders related to metabolism, infection, or exposure to chemical or physical agents.

  There are many external factors that can also lead to hemolysis, including poor venipuncture techniques, excessive pressure exerted on the blood during collection, or shaking a specimen. Hemolysis should be avoided since it can interfere with testing and may lead to erroneous results, especially in potassium measurement as well as liver enzymes and other metabolites. For more information, see Factors Contributing to Hemolysis.

  Lipemia is an excess of fat or lipid in the blood. Lipemic serum is characterized by a milky appearance and, like hemolysis, can interfere with testing and lead to erroneous results. It may be avoided, in most cases, by obtaining fasting specimens.

  If possible, tests on hemolyzed or lipemic specimens will be performed. The condition of the specimen will be noted on the report for the physician's consideration in the interpretation of the results.

- ## Tips for Successful Specimen Collection

  - **Do not leave the tourniquet on the patient's arm for more than one minute at a time. Do not have the patient clench his/her fist while the blood is being drawn.** This will reduce the possibility of analytical error.

  - **Draw tubes in the proper order** to prevent contamination from anticoagulants.

    1. Blood culture tube
    2. Sodium citrate tube (e.g., light blue top) *****
    3. Serum tube with or without clot activator or gel separator (e.g., yellow, red, or speckled top)
    4. Heparin tube (e.g., green top)
    5. EDTA tube (e.g., lavender top or pink top)
    6. Oxalate/fluoride tube (e.g., gray top)

    ***** If a butterfly vacutainer set is used, draw a plain red top tube before drawing the light blue top tube. The red top does not need to be full. Drawing the red top will ensure that the correct volume is collected in the blue top by making up for the amount of blood that is displaced by the butterfly tubing. The red top tube may be discarded.

  - **Do not combine partially filled tubes. Never pour blood from one tube into another tube.**

  - **Fill blue top tubes and gently invert 4-5 times** to thoroughly mix the anticoagulant with the blood**.** Short samples cannot be tested since the ratio of blood to anticoagulant will be incorrect and the results will not be accurate. Lavender top tubes containing liquid EDTA must also be filled.

- **When using a butterfly vacutainer kit (leur adapter) to draw a blue top tube**, **first draw a discard tube (plain red top tube).** The discard tube is used to fill the blood collection set tubing's "dead space" with blood, but the discard tube does not need to be completely filled.

- **Gently invert lavender top tubes 8-10 times** to thoroughly mix the anticoagulant with the blood**. Do not shake the tube** since it may become hemolyzed and unsuitable for testing. Non-liquid EDTA tubes may be partially filled, but must be thoroughly mixed to prevent clotting. Clotted samples cannot be tested because the results will be inaccurate.

- **Gently invert SST tubes about 5 times to activate the clot activator** on the interior walls of the tube.

- Use a boric acid tube to properly preserve urine cultures.

- Use a conical urinalysis preservative tube (red and yellow stopper) to preserve urine for urinalysis.

• Helpful Hints for Difficult Venipunctures

Position Patient

- Have patient lie down if possible.
- Position arm on pillow or towel for proper support.
- Check both arms, forearms, and hands for veins.
- Make plenty of room for yourself.

Use Butterfly Vacutainer Kit (Leur Adapter)

- For patients with small or damaged veins.
- When maneuverability is needed.
- When obtaining blood from hand or forearm.

If Vein Cannot Be Seen Or Palpated

- Use warm towel or cloth on arm to increase circulation.
- Do not hyperextend the arm; doing so leaves the skin too taut for feeling a vein.
- Ask patient to dangle arm to side (or off side of bed) to allow gravity to increase blood flow to arm.

If No Blood Enters Collection Tube

- Advance needle a bit more.
- Slowly pull back needle to center of vein if you suspect that you have gone through the vein. Blood will begin to flow when needle is repositioned.
- Do not reposition the needle.

If you are unable to obtain the required specimen after two attempts, ask another experienced professional to assist. This will prevent further damage to the vein and minimize stress to the patient.