

7. General Considerations in Blood Collection

A. Patient Identification Process

1. General

- a. Most critical step in the blood collection process.
- b. Two step process.
- c. Have patient state his/her name.
- d. Match information on requisition form with information on patient's armband, a information must match *exactly*.

2. Inpatient Identification

- a. Hospitalized patients should have ID bracelet with full name and designated hospital number.
- b. Two step identification process, ask patient to state their name, compare information on requisition with information on bracelet.
- c. **DO NOT** rely on bracelets taped to the wall, bed or night stand, it must be physically attached to the patient.
- d. If the patient does not have a bracelet have nurse ID patient and immediately band or sign requisition.

3. Emergency Room

- a. Be very careful, patient's may be unconscious and unidentified.
- b. Patient may be assigned an ID number only.

4. Ambulatory (outpatient) Identification

- a. Out-patients must be asked how to spell their name and state additional identification information (date of birth, Social Security number) to aid in proper ID.
- b. If patient is a child ask the parent.

B. Test Requisitions

1. Laboratory tests *must* be ordered by a physician.

2. Whether computer generated or manual should have the following:

- a. Patient's name and identification number
- b. Types of tests to be performed
- c. Date to be drawn
- d. Test status (fasting, timed, priority)
- e. Physician's name

3. Double check requisition to make sure all appropriate tubes are drawn.

C. Performing the Phlebotomy

1. Phlebotomist responsibilities

- a. Clean, neat, professional appearance.
- b. Have all equipment and supplies ready, restock and check supplies for expiration dates prior to leaving the lab.

- c. If you do not know what type of specimen to draw ASK FOR HELP.
 - d. Treat all specimens as potentially hazardous.
 - e. Wash hands before and after, put gloves on in presence of the patient.
 - f. If lab coat gets blood on it, disinfect before going on to obtain clean lab coat.
 - g. Follow all infection control policies.
2. Approaching the patient
- a. Approach in courteous, professional manner to help put the patient at ease.
 - b. Politely knock on the door prior to entering the room.
 - c. **Warn the patient before turning on the lights.**
 - d. Introduce yourself and explain your mission. Come up with a greeting other than "how are you?".
 - e. Refer patient to their physician for answers to specific questions about the lab tests.
 - f. Explain the procedure while readying your supplies.
 - g. Ask patient if they have had blood drawn before to get fainting history or to aid in determining arm for selection. Ask when patient has eaten last if fasting specimen is needed.
 - h. Do not set phlebotomy tray on patient's bed or eating tray.
3. Positioning the patient and the venipuncture site.
- a. Very important for successful collection.
 - b. Patient *should not* stand or sit on a high stool.
 - c. Reclining position is preferred.
 - d. Blood drawing chair is used for drawing outpatient in the laboratory.
 - 1) Designed for maximum safety and comfort of the patient and easy accessibility to either arm of the patient.
 - 2) Should have an arm rest.
 - 3) Should lock into place so patient cannot fall from the chair if fainting occurs.
 - 4) Arm rest should adjust up and down to position patient's arm.
 - e. Use a pillow to support arm.
 - f. Have all supplies within reach.
 - g. Bed rails
4. Equipment Selection and Preparation
- a. Specimen Collection Trays
 - 1) Usually plastic and sterilizable.
 - 2) Used to take on phlebotomy rounds.
 - 3) Should include **all** necessary collection equipment and will differ from site to site depending on patient population.
 - 4) **Always** restock your tray during the day as needed and at the end of your shift.
 - b. Selection of equipment will be determined *after evaluation* of the patient:
 - c. Venipuncture: Vacuum system, syringe needle, or syringe butterfly?
 - d. Skin puncture equipment for: heel, toe, finger or earlobe?

D. General Procedure in Blood Collection

- 1. It is critical to establish a routine for blood collection using the appropriate methods which will decrease blood collection errors and increase self confidence.

2. Sequential steps to follow in the blood collection process are as follows:
 - a. **Identify the patient** using the correct protocol for the situation.
 - b. Properly **approach** the patient, greet, **identify yourself**, wash your hands.
 - c. **Assess** the patients physical and emotional disposition, will aid in the selection of equipment and bedside manner to use.
 - d. **Select and prepare** appropriate equipment and supplies in a **confident** manner.
 - e. Select a **suitable puncture site** to specimen requirements.
 - f. **Prepare the puncture site** in an appropriate manner for tests requested.
 - g. **Perform venipuncture/capillary puncture** using aseptic technique and collect samples in appropriate tubes.
 - h. **Dispose** of used and contaminated equipment into appropriate containers.
 - i. Recognize and assess complications and specimen considerations associated with phlebotomy.
 - j. Check the puncture site before you leave the patient.
 - k. Apply adhesive bandage only if necessary.
 - l. Assess criteria for sample recollection or rejection.
 - m. Prioritize patients and sample tubes.

3. The **sequence of collection of evacuated GLASS tubes** in a multi-draw should be in this order:
 - a. Sterile/Blood cultures (yellow top or bottles)
 - b. Red - Non-Additive
 - c. Light Blue coagulation tube
 - d. Red Gel separator tube (speckled or “tiger” top)
 - e. Green (heparin)
 - f. Green/Gray mottled Plasma Separator Tube (PST) with heparin
 - g. Lavender/purple top (EDTA)
 - h. Gray top (Oxalate/fluoride tube)

4. The **sequence of collection of evacuated PLASTIC tubes** in a multi-draw should be in this order:
 - a. Sterile/Blood cultures (yellow top or bottles)
 - b. Light Blue coagulation tube
 - c. Red - Non-Additive
 - d. Red Gel separator tube (speckled or “tiger” top)
 - e. Green (heparin)
 - f. Green/Gray mottled Plasma Separator Tube (PST) with heparin
 - g. Lavender/purple top (EDTA)
 - h. Gray top (Oxalate/fluoride tube)

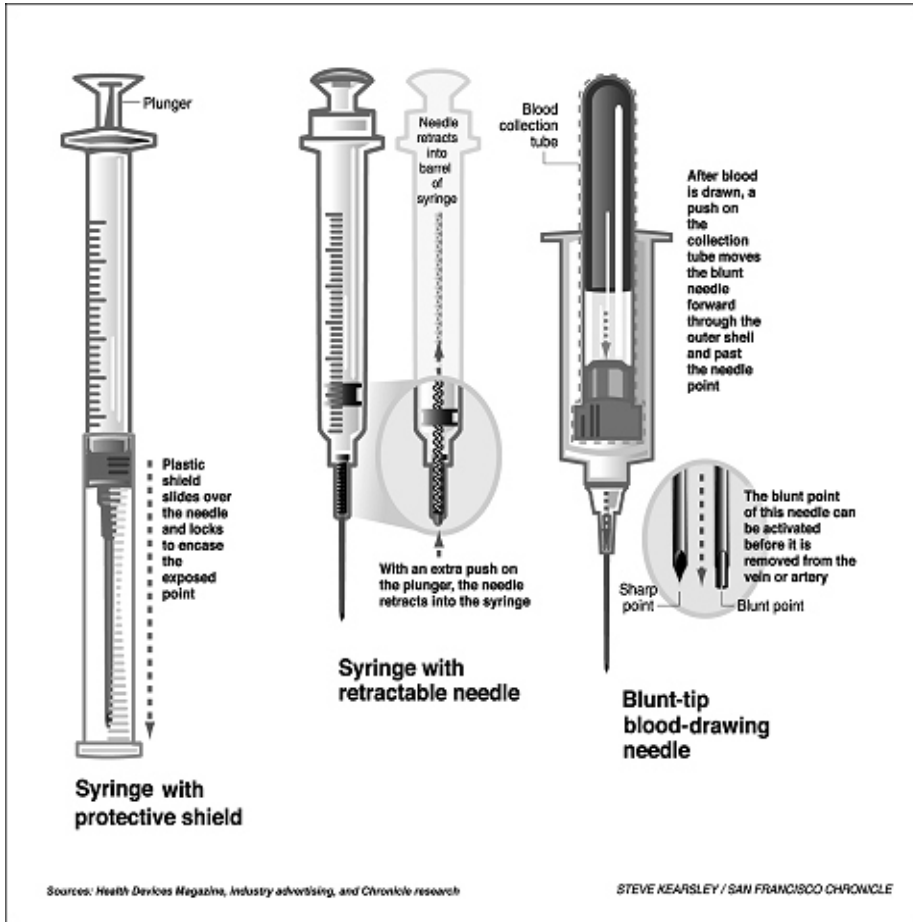
5. Specimen identification and labeling must be done at the bedside immediately after collection.
 - a. The minimum required is: full name, some type of identification number, date/time of collection, phlebotomists’ initials.
 - b. Additional information such as room number, doctor, or additional ID numbers are acceptable but must be correct.

6. Other Considerations
 - a. Number of times a phlebotomist may stick a patient.
 - b. Number of blood collections in one day.
 - c. Volume of blood to be drawn.
 - d. Type of information phlebotomist may give patient.

e. Steps to take when patient refuses to have blood drawn.

E. The Safety Needle Act requires that devices used in blood collection and processing prevent accidental needle stick injuries and blood exposure during specimen processing.

1. The Law was passed in 2000 and it amended the OSHA bloodborne pathogens standard to include stronger requirements to provide safety needles, more accurate recording of needlesticks, and the involvement of workers in the selection of equipment and work practices to prevent needlesticks and other exposures to blood.



BD Eclipse



Portex Needle-Pro

3. ***Equipment with needles must have a single handed method of permanently resheathing the needle.***
4. Used needles, lancets, and other sharp objects must be disposed of immediately in special containers usually referred to as ***sharps*** containers.
 - a. They are usually red or bright orange for easy identification and also are marked ***biohazard***.
 - b. Containers must be rigid, puncture-resistant, leak-proof, disposable, and easily sealed when full.
 - c. Needles are ***not*** to be recapped, cut, bent, or broken prior to disposal.
 - d. The most commonly used device is a rigid plastic container which has an opening for vacutainer needles and one for syringe needles, the needle is inserted into the appropriate hole and the needle is removed by turning the holder or syringe until the needle is removed, the needle then falls into the container.
5. Devices are available for disposal of the entire syringe/needle assembly. These are placed on the wall of the patient's room as well as the laboratory phlebotomy area. When the container is full, it is closed and the entire container is disposed of.

F. Gloves

1. Many health care professionals develop ***allergic dermatitis***.
 - a. Itchy red peeling skin caused by allergic reaction to powder or latex.
 - b. If allergies develop:
 - 1) Try other brands of latex gloves
 - 2) Wear cotton liners under gloves
 - 3) Vinyl gloves
2. Different types are available for use: sterile, latex with powder, talc free (powderless), and vinyl
3. Guidelines for use:
 - a. use non-latex gloves when not handling infectious materials
 - b. use powder-free gloves
 - c. do not use oil based hand creams/lotions
 - d. wash hands frequently with mild soap
 - e. become educated about latex allergies
4. Computer sticky labels are routinely used which cause problems by sticking to gloves and creating holes or tears. Labels are available that do not stick to gloves.

G. Antiseptics, Sterile Gauze Pads and Bandages

1. ***The antiseptic of choice for routine cleansing of the site is 70% isopropyl alcohol. Two exceptions: blood cultures and blood alcohol levels***
2. Sterile gauze pads may be applied to the site after blood collection, must be used for neonatal blood collections.
3. Bandages are used to cover the puncture site to prevent soiling of patient clothing if wound reopens and prevents infection.

H. Prioritizing Patients and Sample tubes

1. Must be set and adhered to ***from order of tubes drawn to which patient is drawn first.***
2. Prioritizing your work:
 - a. ***Routine*** - can be saved and collected as a run, but should not delay collection if other requests do not come in within a certain time frame.
 - b. ***Timed specimens*** refers to specimens to be drawn at a particular time.
 - 1) Most common is the post prandial (PP) glucose, which is drawn 2 hours after a meal.
 - 2) Peak and trough levels of drugs used to change patient medication levels, timing is critical.
 - 3) Hormones fluctuate through out the day: cortisol is highest at 0800, if phlebotomist misses, get someone else to draw ASAP.
 - 4) Aldosterone requires that the patient lay down for 30" prior to blood drawing.
 - c. ***Fasting specimens*** - no food or drink except water for specified time period.
 - 1) Arrange order of morning run so fasting patients are drawn first.
 - 2) If unsure which are fasting look at lab test, glucose, triglycerides and cholesterol are routinely drawn fasting.
 - d. ***ASAP*** - as soon as possible, patient is stable but lab results needed to monitor or treat patient.
 - e. ***STAT*** - patient's life is in danger or patient is in need of immediate treatment based on results. Immediate collection, delivery, processing and testing is required.
 - 1) Patient is critical, drop everything and drawn.
 - 2) Once drawn deliver, process and test immediately.
 - f. ***Preoperative (Pre-Op)*** are of two types:
 - 1) Patient has come in prior to the day of surgery for routine testing.
 - 2) Patient is going to surgery right now, should be handled as a STAT.
 - e. To decrease "STAT abuse" some hospitals have changed to the following system:
 - 1) ***Medical Emergency*** - drop everything and collect.
 - 2) ***Priority 1*** - collect immediately if possible.
 - 3) ***Priority 2*** - ASAP.
 - 4) Preop and routine as above.
 - f. Prioritization for specimen collection requires the phlebotomist to *use common sense*.
 - 1) Usually everything from the ER is ordered STAT, and when possible, should be collected and processed STAT.
 - 2) A STAT Strep screen and a STAT request from the cardiac floor are ordered at the same time. Which specimen should be collected first? Why?
 - 3) Any specimens ordered on babies, patients in surgery or patients in the ER should have first priority.
 - 4) When 10 STAT requests come in at the same time phone the floor to determine which patients are truly critical.

I. Blood Specimen Rejection

1. Each clinical laboratory department should establish specific guidelines for specimen rejection.
2. A log should be kept of rejected samples and should include: patient name/ID number, patient location, reason for rejection, person who was notified of sample rejection, phlebotomist, and date and time notification was given.
 - a. If samples are rejected frequently for the same reason and were drawn by the same phlebotomist, this may indicate the need for remediation.
 - b. If samples are consistently rejected from a certain floor or department, then maybe defective equipment or problems with training by the floor are a problem.
3. Each lab department will establish their own guidelines taking into consideration the following factors:
 - a. Discrepancy between specimen and lab requisition.
 - b. Unlabeled tubes.
 - c. Hemolyzed specimens.
 - d. Wrong tube collected.
 - e. Outdated supplies used.
 - f. Contaminated specimens.
 - g. QNS-inadequate volume
 - h. Anticoagulated samples that are clotted
 - i. Improper transport (time, temperature, light exposure)
 - j. Timed sample drawn at wrong time
2. Supervisor should discuss continued rejection problems with phlebotomist to resolve the problem, if the problem continues phlebotomist may be let go.

J. The Metric System

1. In the medical field all measurements made are reported out using units of the metric system, so it is very important that you have basic knowledge of these units.
2. The metric system is a group of units used to make measurements, such as length, volume, temperature, weight and time.
3. Most metric units have a prefix that tells the relationship of that unit to the basic unit and are the same throughout the metric system to help simplify it.
 - a. "centi" means one-hundredth
 - b. "milli" means one-thousandth
 - c. "hecto" means 100 times
 - d. "kilo" means 1,000 times
 - e. "mega" means 1,000,000 times
4. The meter (M) is the basic unit for measuring length.
 - a. A meter is slightly longer than a yard.
 - b. Short lengths are measured as centimeters (cm) or millimeters (mm).

5. The volume of a liquid is measured in terms of liters (L).
 - a. One tenth of a liter is a deciliter (dL).
 - b. One thousandth of a liter is a milliliter (mL).
 - c. *One milliliter of liquid occupies the same volume as one cubic centimeter (cc).*
 - 1) A 10 milliliter (10 mL) is the same size as a 10 cubic centimeter (10 cc) syringe.
 - 2) In conversation the terms cubic centimeter and milliliter are used interchangeably.

6. The metric system measures temperature in degrees Celsius (C).
 - a. Water freezes at 0 Celsius and boils at 100 Celsius.
 - b. The normal human body temperature is 37 Celsius.

7. A kilogram is the basic unit of weight in the metric system.
 - a. One kilogram equals about 2.2 pounds.
 - b. A gram is for smaller weight and equals one thousandth of a kilogram.

8. Time in the metric system, like all other systems, uses hours, minutes, and seconds.
 - a. Much of the health care system uses 24 hour clock time (military time).
 - b. Rather than a.m. and p.m., the clock goes a full 24 hours, for example, noon 12 is 1200, 4 p.m. is 1600, 6 p.m. is 1800, and midnight is 2400.