Phlebotomy

Scott and White
Approach to Patient

- Check the health care provider’s orders
- Gather supplies
- Check the **Lab Preferred Tube Types** poster
- Introduce yourself to the patient
- Verify patient identity
- Assess alertness and attitude of patient
Verification of Patient Identity

• If the patient is responsive, JCAHO requires an interactive approach
• Ask patient to state their full name
• Ask patient to state their date of birth
• Check medical record number on in-patient arm bands
• Check that all printed labels and tickets are correct for that patient
Methods

• Position the patient’s bed/ gurney sufficiently high that you can work in good light without hurting your back.

• If the intended site is distal, kneel or seat yourself so that you can work closely and steadily.
Vein Selection

1. Cephalic Vein

2. Median Cubital Vein

** Median cubital veins are always the first vein of choice

* Cephalic veins are often better when drawing an obese patient
Site Selection

• Never attempt to draw blood in a site above an IV insertion.
  If an IV arm must be used, do the following:
  - Turn off IV
  - Wait 2 minutes
  - Draw below the IV
  - Label tube
  - Indicate on ticket, sample was drawn below an IV and the type of infusion given
Inappropriate sites

- Arm on the side of a mastectomy
- **Edematous** areas
- **Hematomas**
- Arm with a running transfusion (Wait 1 hour after transfusion is complete to draw specimen)
- Scarred areas
- Arms with **cannulas**, fistulas or **vascular** grafts
Methods

• Vacutainer Procedure:
  – A VACUTAINER™ tube contains a vacuum which, when connected to a needle and a blood vessel is accessed, will aspirate blood from the vein into the tube.

• Syringe Technique
  – you aspirate blood from the vein into a syringe and then place the blood into the tube using a transfer device.
Advantages/Disadvantages
vacutainer method

• Allows for true multi-sample draws, without need to change apparatus during procedure.
• Most rapid method to draw multiple samples.
• Is not conducive to drawing blood from small or difficult veins
Advantages and Disadvantages
syringe method

• Is the **RECOMMENDED** method for drawing from small veins or difficult veins
• Is time and labor intensive
• After draw is complete, this method requires transfer of specimen to sample tubes. This is more manipulation and more chance of accidents.
Needle Size

Venipunctures are usually performed with needles ranging from 21 to 25 gauge.

• 21 ga. used primarily for large antecubital veins.
• 23 ga. for smaller antecubitalis, medium size forearm, hand and foot veins.
• 25 ga. Do not use in adults. Specimens tend to hemolyze
Standard Precautions

• If the venipuncture cannot be accomplished with **gloves** on, ---it cannot and **should not** be done.
• Protect yourself with adequate body-substance isolation at all times.
• Glasses, goggles, or splash shields may also be worn.
• **ALL** patients must be considered infective at all times. It is **NOT ACCEPTABLE** to compromise precautions for any reason [this includes tearing off a finger tip of one's glove to permit palpation].
Methods

Apply tourniquet 4-6 inches above the insertion site. Veins may also be distended by placing the limb in a dependent position. Applying a warm pack to vein puncture site may help to palpate the vein prior to applying the tourniquet.

Blood pressure cuffs may also be used if pumped to 40 mm Hg.
Apply Tourniquet
Methods

• Prep The Skin
  – Alcohol Scrub

• Use vigorous circular motion. Allow the skin to dry. This procedure helps to decontaminate the skin.
Clean with alcohol
Venipuncture

- Hold the skin taut and anchor the vein with the thumb of your free hand. Avoid recontamination of the area.
- Lower the hub of the needle close to the skin (15 – 30 degrees) and align needle for insertion.
- Insert the needle, bevel up, into the skin and subsequently into the vein. The free hand is used to stabilize the vein while the needle is being introduced. If the needle is in the vein, blood return will be visible in the vacutainer.
Venipuncture

Image Courtesy of:
Julie Paulson-Happel, M.T. (ASCP), M.A.
Joel Carl, M.A.
Virtual Hospital
New Order of Draw with Vacutainer CLSI 01/2004:

- Blood culture bottles or Wampole Isolator Tube

- **Light blue** top (sodium citrate)
  - VA hospitals will use a thin tube with black top

- **Red** top/ **Red Yellow** or **Gold** tubes (tubes with or without a clot activator or with or without gel barrier)

- **Green** top (sodium heparin or lithium heparin with or without gel barrier)

- **Light purple** or lavender top (EDTA) or **Pink Top** (EDTA at S&W)

- **Gray** top (sodium fluoride and potassium oxalate)
Order of Draw with Syringe

For purposes of practicality, CLSI now recommends that syringe order of draw be done the same way as the evacuated tube order of draw.
Special Butterfly Note

If blood is drawn by butterfly with adaptor technique, the first tube will always under-fill.

If citrate tubes (Light blue top tubes) are drawn first as per order of draw, a discard tube must be used to clear the air from the line, discarded, then a second blue top tube is drawn to submit to the lab for testing.

**NOTE:** Citrate tubes must be filled completely.
Rationale for Order of Draw

The purpose of order of draw is to avoid possible test error due to cross contamination from tube additives.

Example: EDTA can have a **major** effect on electrolytes and EDTA and heparin can falsely increase PT or PTT tests.

*It is ESSENTIAL* that any tube with anticoagulants be inverted 8-10 times to mix the blood to prevent formation of microscopic clots.
Completion of Venipuncture

• Remove the tourniquet
• Disengaging the final tube and immediately mix specimen.
• Remove the needle
• Do not apply pressure to the site until the needle is completely clear of the skin
• Apply pressure over site (3-5 minutes)
• Cover the puncture site with a bandage
Completion of Venipuncture

• Do not have patient fold their arm. This will not allow platelets to properly plug the wound and may result in a hematoma
• Pressure should be applied to the site for 3-5 minutes
• Patients on blood thinners, such as Coumadin™ or heparin need to have pressure applied to the site for 5 minutes, followed by application of coban
• Instruct the patient or nurse to remove coban after 15 minutes
Transferring blood from syringe to tubes

- Remove syringe needle.
- Attach transfer device to syringe.
- Push the needle on the transfer device into the tube stopper and allow the vacuum in the tube to *draw* the blood into the tube
- *NEVER PUSH* the blood in. It may *hemolyze* the specimen.
- If blood is clotted in the syringe *DO NOT* use the specimen
Label Placement
LABELING

• The Lab **will not** accept unlabeled specimens or specimens without paper work
• Use specimen bar coded label on all specimens received in the laboratory:
  • Patient name
  • Hospital number (MR #)
  • Date/Time drawn
  • Initials of the health care provider
Assure Delivery to Lab

• Check bus schedule in STC building
• Place in football and send to Lab
• Have specimen hand delivered to Lab