

LTR18980

## Phlebotomy Venipuncture Procedure

POSTED-LIS

**PRINCIPLE:** This policy establishes criteria for the correct collection of blood specimens by venipuncture.

**POLICY:** By establishing a procedure for the correct collection of blood by venipuncture many pre-analytical errors and patient management complications can be avoided. Patient safety is the ultimate goal above all other considerations. Cost, efficiency, etc are secondary to ensuring that in no way will the patient be harmed by the phlebotomy procedure. This includes all aspects of the procedure including ordering, drawing, labeling, handling and transporting the specimen. The quality of the patient results is directly dependent upon the quality of the specimen. By providing the highest standard of safety and quality of care customer service satisfaction can be achieved.

### PROCEDURE:

#### A. Supplies (and use of supplies) – (Refer to Standard Phlebotomy Tray policy)

1. Blood Collecting Trays- Blood collecting trays should be lightweight and easy to handle with enough space and compartments for the various supplies.
2. Gloves- Disposable latex, vinyl, polyethylene, or nitrile gloves provide barrier protection and **must be worn for all venipuncture procedures to comply with OSHA regulations**. Latex free gloves must be worn for all patients with a hypersensitivity to latex proteins.
3. Hubs –
  - a. **All Vacutainer holders are to be SINGLE USE**. OSHA states “Blood tube holders, with needle attached, must be immediately discarded into an accessible sharps container after safety feature has been activated”. The re-use of vacutainer blood tube holders is strictly prohibited by OSHA and BVHS. (According to OSHA, “removing contaminated needles and re-using blood tube holders can expose workers to multiple hazards.”)
  - b. **Specimen transfer hubs are also available and, for our safety, are to be used before attempting to use a transfer needle**. To use this device, simply attach it to the syringe and place the/each necessary vacutainer tube in the in the vacutainer holder until the appropriate amount of specimen is transferred.
4. Needles- A large gauge (G) number indicates a small needle, while a small gauge number indicates a large needle. **Needles must always be sterile and should never be recapped**. In order to prevent potential worker exposure, the needle safety feature should be activated immediately after specimen collection and discarded without disassembly into a sharps container. Needles are **single use only**.
  - a. BD Hypodermic needles (*Please see Section B “Assembly of Supplies/Safety”; Line 2 “Syringe Draw”, sec. C for instruction on specimen transfer using the Hypodermic needle.*)
  - b. Butterfly “Push Button”
5. Sterile Syringes-Sterile syringes must remain sterile. If removed from their container and not used immediately they are no longer considered sterile and are not to be used.
6. Blood Collection Tubes- Venous blood collection tubes are manufactured to withdraw a predetermined volume of blood.

7. Tourniquets-Tourniquets must be discarded immediately when contamination with blood or body fluids is obvious or suspected. Before drawing any in-patients, be sure to look around the room, typically next to the sharps container, for a tourniquet that is specific for that patient. Out-patient draws and off-site tourniquets are replaced daily, or upon any sign of obvious or suspected contamination.
8. Antiseptics- 70% isopropyl, PVP iodine prep pads, or 2% Iodine Tincture.
9. Gauze Pads-Small, gauze pads should be available. Cotton balls may also be used.
10. Puncture-Resistant Disposable Container-An approved puncture-resistant disposable container that is compliant with national or local regulations must be available for the disposal of the contaminated needle assembly. Such containers typically have a color regulated by each country, and a biohazard symbol.
11. Ice-Ice or refrigerant should be available for specimens that require immediate chilling.
12. Bandages/Tape- Adhesive bandages, preferably hypoallergenic, should be available, as well as gauze wraps for sensitive or fragile skin.
13. Warming Devices- Warming devices may be used to dilate blood vessels and increase flow. When using commercial warmers follow the manufacturer's recommendation. Warming devices should not exceed 42° C.
14. Specimen Collection Manual/Reference Lab Manual- A test manual listing the tube(s) and volume requirements for various tests, specimen handling instructions, and precautions is available on all computers.

## **B. Assembly of Supplies/Safety**

All needles and syringes must be taken out of the original package in the patient's presence. Never preassemble the vacutainer apparatus with a needle prior to use.

1. Vacutainer Eclipse
  - a. Holding both colored shields, twist and remove white shield (end to be screwed into holder).
  - b. Screw in holder.
  - c. Rotate safety shield back out of way.
2. Syringe Draw
  - a. Open Hypodermic Needle package and remove device.
  - b. Attach appropriate Hypodermic Needle to syringe by twisting the needle onto the syringe.
  - c. When transferring the specimen to a vacutainer tube, no associate is to handle a tube at any time with their hand while inserting the transfer needle into the vacutainer. This includes stabilizing a tube with one's hand, in the phlebotomy tray, while inserting the needle. The hand that is not holding the syringe is not to aid in specimen transfer. The associate may only use their hand to remove the vacutainer tube from the transfer needle, while pulling the vacutainer tube away from the transfer needle and either immediately placing the needle in another tube located on the phlebotomy tray, or immediately activating the safety shield for discard, if the specimen transfer is complete. If the specimen cannot be successfully transferred without the need for an associate to use their "free" hand to hold or stabilize a vacutainer tube, then a transfer hub is to be utilized.
3. Butterfly "Push Button" with a SYRINGE
  - a. Open Butterfly Push Button package and remove device.
  - b. Remove luer cap and attach syringe
  - c. Remove the clear plastic needle sheath.
4. Butterfly "Push Button" with a VACUTAINER
  - a. Screw multiple adaptor into vacutainer.

- b. Open Butterfly Push Button package and remove device.
- c. Remove colored end of multiple sample adaptor and remove luer cap to attach butterfly.
- d. Remove the clear plastic needle sheath.

### C. Guidelines to Prioritizing Draws

#### **Specimen Priority: (As stated in the “LIS Associate General Training Procedure”)**

“The urgency that the healthcare provider wants the specimen collected/run determines that order’s priority. We have three specimen priorities:

A. STAT (S) – this priority means that the order is to be collected and run right away, without delay. This status is used most often in emergency situations and should be the first specimens collected.

B. URG (U) – this is the urgent specimen priority and it is to be collected as soon as possible but not before a STAT. Urgent specimens are the middle priority, meaning they are important to be done quickly but not absolutely critical (i.e. STAT)

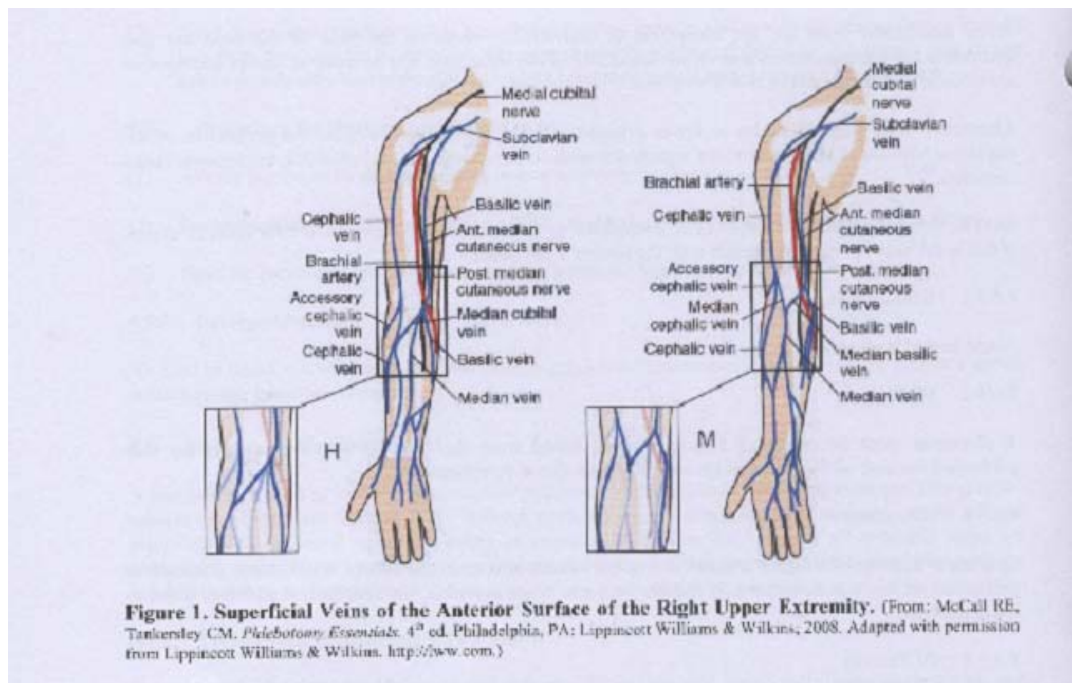
C. ROUTINE (R) – this is the lowest specimen priority. Routine specimens should be collected when you can but not before a STAT or URG.

- The last thing to understand about specimen priority is the concept of Timed Orders. Any one of the above three priorities may be ordered for a specific time of the day to be collected (i.e. URG for 2000 or ROUTINE for 2359). These are called **TIMED ORDERS**. When a specimen is requested for a specific time then the priority is superceded and the specimen should be collected at the requested time. All STAT and URG specimens (regardless of what time they are ordered for) go into their respective Collection Category (STAT or URG, see above). If a specimen is ordered as a ROUTINE priority for a specific time, it will go into that specific Collection Category time (i.e. 0830 or 1600). If a specimen is ROUTINE priority and **DOES NOT** have a specific time requested it will go into the POOL Collection Category. Any specimens in the POOL Collection Category are of the lowest urgency, to be collected whenever you have time.”

**NOTE:** STATS and TIMED ORDERS are to be collected within a **15 minute window** (15 minutes before or after the ordered time). It is encouraged that these specimens are received in the laboratory within 15 minutes of being drawn.

### D. Selection of Venipuncture Site

Antecubital vein location varies slightly from person to person; however, two basic vein distribution arrangements referred to as the “H-shaped” and the “M-shaped” patterns are seen most often. The “H-shaped” pattern is so named because the most prominent veins in this pattern- the cephalic, cephalic median, median basilic, and basilic veins- are distributed on the arm in a way that resembles a slanted H. The most prominent veins of the M pattern- the cephalic, median cephalic, median basilic, and basilic veins- resemble the shape of an M. The H-shaped pattern is seen in approximately 70% of the population.



**Factors in Vein Selection:** Select the vein carefully. The brachial artery and several major nerves pass through the antecubital area. Accidental artery puncture and nerve injury are risks of venipuncture. Prioritizing veins can minimize the potential for accidental arterial puncture and nerve involvement. Typically, a tourniquet is used to aid in the selection of a vein unless specific tests require that a tourniquet not be used. A tourniquet is not necessary if veins are large and easily palpated. However, if only the basilic vein is visible without a tourniquet, one must be applied so the availability of safer veins (e.g. median and/or cephalic) can be assessed. Palpation is usually performed using the index finger. The collector's thumb should not be used to palpate because it has a pulse beat. In addition to locating veins, the palpation pressure helps to differentiate veins from arteries, which pulsate, are more elastic, and have a thick wall.

**Accidental Arterial Puncture:** If during the procedure accidental arterial puncture is suspected (e.g. rapidly forming hematoma, rapid filling tube, and bright red blood), discontinue the venipuncture immediately. Remove the needle and apply direct forceful pressure to the puncture site for a minimum of 5 minutes until active bleeding has ceased. The nursing staff and physician must be notified and the incident documented according to institutional policy.

Consult with supervisory personnel to determine the suitability of the suspected arterial specimen for testing. If the specimen is acceptable it must be annotated that the specimen was an arterial specimen. In some cases different normal reference intervals are assigned to arterial blood. This information must be conveyed to the caregiver through Meditech Specimen Collection comment and Test Result comments.

**Nerve Injury:** If the patient feels a shooting, electric-like pain, or tingling or numbness proximal or distal to the venipuncture site, terminate the venipuncture and remove the needle immediately. Repeat the venipuncture in another site with a new sterile needle if needed. Document the incident and direct the patient to medical evaluation if indicated.

## E. Performing Venipuncture

Each individual may attempt up to total of two (2) venipunctures per patient. Under unusual circumstances (ex: only available phlebotomist or tech) each individual may attempt up to a total of three (3) venipunctures. If unsuccessful, you **MUST** seek assistance. Please refer to the "Handling of Hard Draws" section of this procedure.

1. Know what tests are ordered, what is needed to properly collect the specimens, and observe special handling requirements. If in doubt look up the test in the Specimen Collection Manual, Reference Laboratory Manual or On-Line Site.
2. Identification

The laboratory uses two patient identifiers for identification of all patients before the procedure begins. Typically, the patient's first and last name and date of birth are used. All specimens must be labeled at the time of collection in the presence of the patient.

Inpatients - Positive identification of the patient must be confirmed before the procedure by comparing the Meditech collection labels to the patient's armband visually and *verbally* by verifying with the patient (when possible). If any discrepancy arises it must be corrected prior to collecting specimens. The responsible authority (i.e. doctor, nurse, department secretary, etc.) must be notified of the discrepancy. The armband must be attached to the patient. The phlebotomist must not rely on room number, name on nearby medical chart/forms, labels on connected IV bags, name on medication bottles, etc. for proper identification

Outpatients - Patients should be called back by first name only. Once in the phlebotomy chair, patient is asked to verbalize first and last name and birth date which is then compared to specimen label and patient's requisition.
3. Sanitize hands before and after patient contact with alcohol based cleanser or soap and water.
4. Verify the patient's fasting status or diet restrictions as appropriate and inquire if the patient has a latex sensitivity or sensitivity to anything used in the phlebotomy procedure. This includes, but is not limited to, the following: latex, metal (needles), isopropyl alcohol, iodine (cleansing agents), adhesive tape, cotton, etc. Ask if the patient has ever had an adverse reaction to a phlebotomy procedure (i.e. loss of consciousness). Select the appropriate supplies based on the patient's answers.
5. Assemble the necessary phlebotomy supplies, including the appropriate tubes according to test requests. (see assembly above)
6. Put on gloves.
7. Position the patient carefully. Make sure the patient has no food, drink or any other object that could cause choking or injury. Use a pillow if necessary to prop the arm or hand. If possible position the patient's arm or other site in a downward position to prevent reflux or "backflow" from the collection tube into the vein.
8. Apply tourniquet around the arm 3 to 4 inches about the venipuncture site. Application of the tourniquet should not exceed one minute as localized stasis with hemoconcentration and infiltration of blood into tissue may occur. This may cause erroneously high values for all protein-based analytes, packed cell volume and other cellular elements. If a tourniquet has been in place for longer than one minute, it should be released and reapplied after three minutes. If a patient has a skin lesion at the intended tourniquet location, consider an alternate draw site or apply the tourniquet over the patient's gown. Alternatively, a piece of gauze pad or paper tissue should be used so the skin is not pinched. If using a blood pressure cuff for the tourniquet do not inflate it to more than 40 mmHg.
9. If necessary, ask the patient to slightly clench their fist (no white knuckles please). This helps to make the veins become more prominent and easier to enter. There must not be vigorous hand pumping because this can cause changes in the concentration of certain analytes in the blood.
10. Select venipuncture site. The preferred venipuncture site is the antecubital fossa, which is the area of either arm that is anterior to (in front of) and below the bend of the elbow where a number of large veins lie relatively near the skin's surface. When antecubital veins are not acceptable or unavailable, veins on the back of the hand are also acceptable for venipuncture. Veins on the underside of the wrist must not be used, as nerves and tendons are close to the surface of the skin in this area. (For more detail refer to Selection of Venipuncture Site)

11. Cleanse the venipuncture site with 70% Isopropyl Alcohol Pads or appropriate cleanser in a circular motion from the center to the periphery. Allow the site to dry (this helps to avoid hemolysis). DO NOT wipe the site with gauze or a cotton ball as this would contaminate the site. Avoid touching the point of entry after the area has been cleansed. If the patient has “deep” veins and the phlebotomist must touch the area, he/she must ensure the finger being used is also cleansed with the appropriate cleansing agent (alcohol, PVP iodine, or 2% iodine tincture, etc.)

Exceptions:

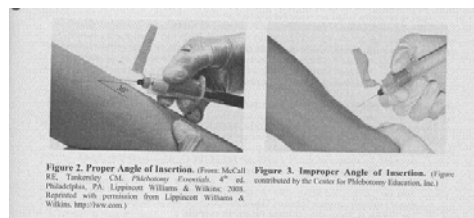
**Blood Alcohol** specimens require cleaning the site with **PVP IODINE Prep Pads** (10% povidone iodine solution). (Refer to Section E for additional details.)

**Blood Culture** specimens require cleaning the site first with 70% isopropyl Alcohol Pads then followed by **2% Iodine Tincture**, which must be allowed to air dry before drawing the blood. (Refer to Section F for additional details.)

12. Perform Venipuncture

Inform the patient that the venipuncture is about to occur. From this point on be prepared to react to a sudden and unexpected loss of consciousness.

Grasp the patient's arm firmly below (distal to) the intended venipuncture site. The phlebotomist's thumb should be used to draw the skin taut to anchor the vein. The thumb should be positioned 1 to 2 inches below the venipuncture site. Anchoring the vein from above is not recommended due to the risk of accidental needle stick injury. With the bevel up, puncture the vein with the needle at a 30° angle or less. Keeping the needle as stable as possible in the vein, push/connect the first tube onto the needle using the holder flanges to prevent /restrict needle movement. Maintain the tube below the site when the needle is in the vein so there is air space between the incoming blood and the patient whenever possible.



Fill all tubes using the vacutainer holder or draw adequate volume of blood in the syringe. Allow the tube to fill until the vacuum is exhausted and blood flow ceases. For tubes with additives this will ensure there is a correct ratio of blood to additive. Remember to mix by inversion 5 to 10 times for all tubes with additives. (Do not delay this step).

13. Release the tourniquet and request patient to open his/her fist.
14. Place the gauze pad over the puncture site and remove the hypodermic needle from the patient's arm.  
**Butterfly “Push Button”** – Prior to the retraction of the needle, cover the venipuncture site with a gauze pad. Using your index finger, activate the push button to retract the needle, while the needle is in the vein. The needle will slide out of the venipuncture site and lock into place.
15. Immediately apply pressure to the venipuncture site with a cotton ball or gauze until the bleeding stops. Do not allow the patient to bend his arm as a substitute for pressure as this technique is not adequate to prevent hematoma formation under all circumstances. Patients may apply direct pressure as long as the collector constantly monitors the site to ensure pressure is adequate. If a hematoma develops or bleeding persists longer than 5 minutes a nurse should be alerted so the attending physician can be notified. Pressure, applied with a gauze pad, must continue at the site as long as necessary to stop the bleeding.
16. Activate Safety Device

Hypodermic Needle - Firmly lock safety shield using the thumb (one handed procedure). For greatest safety, use the thumb technique and activate away from self and others.

17. Properly dispose of the single draw apparatus and needle using the designated container on the phlebotomy tray or designated biohazard containers in each location.
18. Apply a bandage or tape over the venipuncture site. If persistent bleeding has occurred, wrap a gauze bandage tightly around the arm to keep the pad in place. Instruct the patient to leave the bandage on for at least 15 minutes.

**\*\*NOTE:** Effective 03-01-12

IN-HOUSE patients ONLY: Purple "COBAN ONLY" signs will be placed on patients door frames that have been determined by nursing staff to have sensitive skin i.e. skin tears, open sores etc. NO tape, band-aids or adhesives of any type should be used on these patients by laboratory staff. The coban (self-adherent wrap) will be issued by the nursing staff and kept in the top drawer below the sharps in the patient's room. Please do not remove the coban from the patient's room; it is charged to the patient and will be used during their stay. To reassure that the coban is applied properly, two fingers should fit easily under the coban. Also, each phlebotomy tray will have a pair of scissors specifically for that tray and when used MUST be sterilized with an alcohol pad(s).

19. Label Specimens

**Place proper labels on the specimens** (including Blood Bank Specimens) **at the time of collection in the presence of the patient. Write the time drawn and your initials.** Include the date on all labels that do not already have it. Also remember for Blood Bank specimens to include the Blood Bank ARMBAND number and Blood Loc code. For blood cultures document the amount of blood added to each culture bottle. **In the Outpatient Lab, the patient must be shown the tube to be used for Blood Bank to confirm if it is the correct name on the label, then the patient is to initial the label on the drawing log to acknowledge this confirmation.** The Meditech specimen labels provide unique identification of the specimen just collected with a specimen number and departmental prefix, full name of patient, account number, birth date, room number and age – along with tests ordered. If Meditech labels are not available the specimen must be hand labeled with patient's name, date of birth, collector's initials, date and time of collection.

20. Remove gloves and wash hands with soap and water or alcohol based hand sanitizer.
21. Send or prepare to take the properly labeled blood collection tubes to main laboratory for testing.

#### **F. Blood Alcohol Collection Requirements**

1. The site must be cleaned with a non-alcohol, non-volatile antiseptic such as providone-iodine prep pads. Do not use Iodine Tincture. No alcohols shall be used as a skin antiseptic.
2. The blood is to be collected into a grey top tube with SOLID Potassium Oxalate (anticoagulant) and Sodium Fluoride (preservative). The tube must be full.
3. Tamper evident tape must be placed over the top of the lid and down the sides of the tube.
4. Promptly return the specimen to the laboratory for testing.
5. The yellow chain of custody Blood Alcohol Documentation Sheet, Venipuncture Information section, must be completed. These forms are located in the chemistry department.

#### **G. Blood Culture Special Collection Requirements**

Blood cultures should be drawn prior to any antibiotic treatment if possible. If there is more than one blood culture ordered; draw cultures on opposite sides one hour apart; unless otherwise requested by physician.

1. Cleanse the top of the bottles thoroughly with 70% alcohol. Allow to AIR DRY COMPLETELY.
2. Cleanse the venipuncture site with 70% alcohol followed by 2% iodine tincture. Clean the area in a circular motion, starting from the inside working outward. ALLOW TO AIR DRY. This is a very critical step - **The iodine solution does not start to work until it is dry**. If the patient is allergic to iodine, clean twice with 70% alcohol.
3. Once the venipuncture site is disinfected, do not touch the area. If you must touch the site again, disinfect your gloved finger with 70% alcohol followed by 2% iodine tincture.
4. Collect the blood in a syringe and transfer it to the bottles or use a butterfly with vacutainer holder which fits over the bottle neck. DO NOT put the bottle directly on the vacutainer holder when drawing from the arm.
5. The optimal amount is 5ml per bottle but for a hard stick or a baby the minimum amount is 0.5 ml per bottle. If unable to collect more than 0.5ml, microbiology dept will accept just an aerobic bottle; however, every effort must be made to collect both aerobic (blue/silver) and anaerobic bottles (red).  
NOTE: False positives result from overfilled bottles.

## H. Universal Precautions

Because it is often impossible to know what isolates or specimens might be infectious, all patient and laboratory specimens are treated as infectious and handled according to "Universal Precautions".

## I. Blood Bank Specimens/ Armbands

In addition to 2 patient identifiers, the unique Blood Bank Number and the 3 digit alpha code for "Blood Loc" must be observed (on Blood Bank arm band) and written on the specimen for Blood Bank and on the collection labels. **NO** specimens will ever be labeled after leaving the side of the patient. **NO** specimen for pre-transfusion testing will ever be accepted by the Blood Bank without an armband number. **NO** Blood Bank armband will be placed on a patient after the blood is drawn. Blood Bank armbands must **always** be in place **before** drawing blood. **NO** blood specimen can be brought back to the patient after it has left the side of the patient, and be labeled by the individual drawing the sample. There are **NO** exceptions. Specimens drawn for Blood Bank testing **MUST** be labeled at the patient's side. (This policy is also applicable for Line draws, Hickmans, and/or Art lines.)

If the patient does not have a Blood Bank armband, then it is the lab's responsibility to place the armband on the patient.

## J. Adverse Reactions

(FOR OUT PATIENT LAB) If a patient has loss of consciousness press the emergency buzzer that will notify the pre-surgery screening nurse of the situation (buzzer located at every drawing station). Where practical, lay the patient flat, or lower his/her head and arms if the patient is standing, and loosen tight clothing. The use of ammonia inhalants is not recommended because of associated bad effects.  
**Nausea-** Press the emergency buzzer; make the patient as comfortable as possible, instruct the patient to breathe deeply and slowly, and apply cold compresses to the patient's forehead. **Vomiting-** Press buzzer, give the patient an emesis basin, have tissues ready and give the patient water to rinse her mouth. **Convulsions-** Press buzzer; do not restrain the movements of the patient's extremities completely, but try to prevent injury.

(FOR INPATIENTS) Use the emergency call button located in each patient room to alert the nursing staff.

## K. Isolation Procedures

See the following policies:

1. BVHS Nursing Department Procedure "Isolation/Transmission Based Precautions".
2. BVHS Nursing Department Policy Manual "Subject: Lab Notification of Patient Isolation".



If you are not sure ask the patient's nurse for instructions.

#### **L. Guidelines for Venipuncture in Regards to IV Sites:**

An intravenous catheter site (IV SITE) is a site where a catheter is inserted into a vein for supplying medications or nutrients directly into the bloodstream. Patients often have IV sites that are "ACTIVE" sites (currently being used for treatment) and some that appear to be "IN-ACTIVE" (does not appear to be in use for treatment). Drawing blood from an arm with an Active or In-Active IV has a potential for erroneous and misleading test results if the following steps are not closely followed. Whenever possible, blood should be drawn from the opposite arm when an IV fluid (including transfused blood products) is being administered into a patient's arm. If an IV is temporarily closed off, this must be done only by authorized caregivers according to specific institutional policy. Do not ever attempt to unplug, adjust, insert or turn off/on an IV.

1. Drawing **BELOW (distal to)** an ACTIVE or IN-ACTIVE IV SITE:
  - a. For an ACTIVE site ask the responsible caregiver to turn off the IV infusion for at least 3 minutes before venipuncture. Care should be taken to ensure that the flow has completely discontinued. For an IN-ACTIVE site, verify with the responsible caregiver that there has not been any form of treatment administered thru the IN-ACTIVE site within 5 minutes of performing the venipuncture.
  - b. Apply the tourniquet distal to (below) the IV infusion site between the IV and the intended venipuncture site.
  - c. Perform the venipuncture. Make sure that a responsible caregiver is available to restart the IV as soon as possible after venipuncture to help prevent the IV site from clotting off.
  - d. "**LBIV**" and the time the IV was shut off for should be written on the specimen label so that the laboratory personnel receiving the specimen can enter the information properly into Meditech Specimen Comments. The following canned text may be used with the [F4] function key.

"**LBIV**" – BELOW an IV site

"This specimen was drawn in same arm and below an IV!!

The IV was turned off by nursing for [number] minutes before collecting the specimen. [Associate performing venipuncture] "

This step is vitally important in determining if a specimen has been compromised by IV fluid. It allows the technologist performing testing to be aware of possible compromised results prior to releasing results. It also aides the caregiver in interpreting results appropriate to the patient's current clinical history.

2. Drawing **ABOVE (proximal to)** an ACTIVE or IN-ACTIVE IV SITE:
  - a. ***DRAWING ABOVE AN IV SITE SHOULD BE A LAST RESORT. Other draw sites should be attempted first.***
  - b. Specimens for Coagulation testing (PT, PTT, etc), Kinetic Dosage levels (Vanco, Gent, etc), and Blood Cultures should NEVER be obtained from above an IV site.
  - c. For an ACTIVE site ask the responsible caregiver to turn off the IV infusion for at least 5 minutes before venipuncture. This time must be timed accurately! Care should be taken to ensure that the flow has completely discontinued. For an IN-ACTIVE site, verify with the responsible caregiver that there has not been any form of treatment administered thru the IN-ACTIVE site within 5 minutes of performing the venipuncture.
  - d. Apply the tourniquet above the IV site and the draw site.
  - e. Perform the venipuncture by allowing for the first 5ml of blood to be discarded. DO NOT deliver this "waste" to the laboratory! It shall be discarded upon completion of the venipuncture. Also, make sure that a responsible caregiver is available to restart the IV as soon as possible after venipuncture to help prevent the IV site from clotting off.
  - f. "**LAIV**", the fluid that was turned off, and the name of who shut it off should be written on the specimen label so that the laboratory personnel receiving the specimen can enter the

information properly into Meditech Specimen Comments. The following canned text may be used with the [F4] function key.

**"LAIV" – ABOVE an IV site**

"This specimen was drawn from above an IV site. 5 minutes prior to the venipuncture [name of fluid being given] was turned off by [name and title] and 5mls of blood was discarded prior to obtaining the specimen for testing [Associate performing venipuncture and date]."

This step is vitally important in determining if a specimen has been compromised by IV fluid. It allows the technologist performing testing to be aware of possible compromised results prior to releasing results. It also aides the caregiver in interpreting results appropriate to the patient's current clinical history.

**M. Handling of Hard Draws:**

The following guidelines have been put in place to help associates obtain a successful venipuncture on patients that can prove to be very difficult to draw.

1. The maximum number of venipunctures that shall be attempted is 9; 3 lab associates attempting 2-3 venipunctures each.
2. Attempt a finger stick (Not acceptable for Coagulation studies, Blood cultures, or for tests that may be altered by this collection method).
3. Verify with the attending staff that the patient does not have indwelling line(s), heparin or saline lock(s), vascular access device(s) (VADs)-See Blood Collection from Vascular Access Devices that could be used for blood collection.
4. Ask the attending staff if a leg or lower extremity order can be obtained (foot draw). **Permission from physician must be secured before drawing from a leg.** This permission MUST be properly documented on the patients chart.
5. Attempt a draw from above an IV site (follow "Guidelines for Venipuncture in Regards to IV site" in this procedure.
6. After all the above have been attempted and have proved to be unsuccessful the attending staff members shall again be notified. At this point the attending staff shall notify the patient's physician and determine how to obtain acceptable laboratory specimens (laboratory to inform the staff to do this). The conclusion shall be documented in Meditech with the appropriate names and times.

It is very important that all attempts to obtain a successful specimen be documented within Meditech in the patients Specimen comments using the "**LHARDS**" comment. **LHARDS**, name and title of associate notified, and time notified should be written on the Meditech label so that the associate receiving the label in the laboratory can enter the information into Meditech Specimen Comments.

**"LHARDS" – Hard stick**

"Unable to obtain specimen(s) due to difficult draw. Patient to be redrawn. Test(s) to be redrawn include: [test(s) to be redrawn]. Notification to [name/title] on [location] at [time] [date].  
@ [date and time/ associate that missed]

Notification of the failure to obtain a specimen should be given to an attending staff member within **15 minutes** of each attempted draw. The attending staff shall also be notified what steps will be taken next. Clear communication is vital during difficult situations!

**N. Other Venipuncture Location Considerations:**

1. DO NOT Draw from areas of Extensive Scarring- Avoid healed burn areas.
2. Mastectomy- A Physician must be consulted before drawing blood from the side on which a mastectomy was performed because of the potential for complications due to lymphostasis.
3. Hematoma- Specimens collected through a hematoma area may cause erroneous test results. Phlebotomy must not be performed on any size hematoma. If another site is not available, the specimen is collected distal to (below) the hematoma.

4. Indwelling lines, heparin or saline locks, vascular access devices (VADs)-See Blood Collection from Vascular Access Devices.
5. Fistula-A fistula is an artificial shunt connection done by a surgical procedure to fuse vein and artery together and is used for dialysis only. An arm with a fistula should not be used for drawing blood. The use of a tourniquet may cause complications.
6. Leg/Lower Extremities - **Permission from physician must be secured before drawing from a leg.** This permission MUST be properly documented on the patients chart. A final option might be a femoral stick by the physician.

#### **O. Order of Draw**

1. Blood Culture Specimen
2. Coagulation Tube (blue top)
3. Plain red AND/OR Serum Separator Tube (red gel/SST)
4. Heparin Tube (green top)
  - a. Plain Sodium Heparin
  - b. Plain Lithium Heparin
  - c. Lithium Heparin Gel
5. EDTA Tube (purple and pink top)
6. Fluoride Tube (grey top)
7. Miscellaneous tubes (these are drawn in no specific order)
  - a. Heavy metal dark blue top (EDTA and plain red)
  - b. ACD yellow top

NOTE: When using a winged blood collection device set for venipuncture and a coagulation tube is the first tube needed, first draw a discard. The discard tube must be used to prime the tube of the collection set, which will assure maintenance of the proper anticoagulant/blood ratio in the first tube filled. The discard tube can be a plain red non-additive tube and does not be completely filled.

#### **P. "After Hours" Draws**

There are times that patient's need lab work after the outpatient lab is closed; typically this happens on weekends. OPL weekend hours: Saturdays 0630-1200 / Sundays Closed

1. When a patient comes to get lab work after hours, the patient needs to come through the ED entrance.
2. Security or the ED secretary will call main lab (x5318) for a phlebotomist to go to ED to draw the patient.
3. Main lab will call bed board (x4227) to have registration go to ED. Registration will have the patient sign any needed paperwork before the patient is drawn. Registration will also register the patient and assign an account number for the Lab.
4. The phlebotomist will draw the patient in triage, minor care or consultation room to protect patient privacy.
5. The phlebotomist will bring specimen(s) and paperwork to main lab to have the processor order the labs.

#### **NOTES:**

- For the protection and confidentiality of our patients and associates, patients are not to be drawn in Outpatient Lab CDS after hours.
- If the patient presents themselves to bed board (IP Pavilion) please draw the patient there.

#### **Q. PATIENTS 6 MONTHS OR LESS**

Laboratory blood specimens on children 6 months or less should be obtained primarily by skin punctures, heel stick, finger stick or big toe stick unless the amount of blood needed is too great for a skin puncture or a coagulation test has been ordered which requires a venipuncture. The purpose of this requirement is to avoid unnecessary trauma to the child's vein.

## R. Pediatric Blood Volume – Special Requirements

Obtaining large quantities of blood from an infant, especially from premature infants, may result in anemia or cardiac arrest. The following chart shows the maximum volume of blood to be drawn at one time from patients younger than 14 years of age.

If the order exceeds the amount of blood allowed, the physician must be notified prior to drawing the patient.

| Patient's Weight<br>(Pounds) | Patient's Weight<br>(Kilograms – approx.) | Maximum Amount of<br>blood to be drawn at<br>any ONE time (mL) | Maximum Amount of<br>blood to-cumulative to<br>be drawn during<br>hospital stay (1 month<br>or less-mL) |
|------------------------------|---|--|---|
| 6-8                          | 2.7-3.6                                   | 2.5  | 23  |
| 8-10                         | 3.6-4.5                                   | 3.5  | 30  |
| 10-15                        | 4.5-6.8                                   | 5  | 40  |
| 16-20                        | 7.3-9.1                                   | 10   | 60  |
| 21-25                        | 9.5-11.4                                  | 10   | 70  |
| 26-30                        | 11.8-13.6                                 | 10   | 80  |
| 31-35                        | 14.1-15.9                                 | 10   | 100   |
| 36-40                        | 16.4-18.2                                 | 10   | 130   |
| 41-45                        | 18.6-20.5                                 | 20   | 140   |
| 46-50                        | 20.9-22.7                                 | 20   | 160   |
| 51-55                        | 23.2-25.0                                 | 20   | 180   |
| 56-60                        | 25.5-27.3                                 | 20   | 200   |
| 61-65                        | 27.7-29.5                                 | 25   | 220   |
| 66-70                        | 30.0-31.8                                 | 30   | 240   |
| 71-75                        | 32.3-34.1                                 | 30   | 250   |
| 76-80                        | 34.5-36.4                                 | 30   | 270   |
| 81-85                        | 36.8-38.6                                 | 30   | 290   |
| 86-90                        | 39.1-40.9                                 | 30   | 310   |
| 91-95                        | 41.4-43.2                                 | 30   | 330   |
| 96-100                       | 43.6-45.5                                 | 30   | 350   |

**Note:** Definition of **FASTING**: Fast for 10-12 hrs preceding the test. The patient should not eat, drink, smoke, or chew gum during this period. Smoking or drinking during the fasting period may stimulate digestion and interfere with the test results. The patient may drink a small amount of water only.

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3. Ernst, D.J., ETAL, NCCLS Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture: Approved Standard-Sixth Addition, Vol 27, No. 26, OCT 2007
4. Kiechle, F.L., ed. *So You're Going to Collect a Blood Specimen, An Introduction to Phlebotomy*. 11<sup>th</sup> ed. Northfield, Ill: College of American Pathologists; 2005.