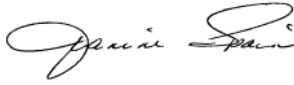

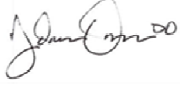


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|---|---|---------------------|---------------------------------------|
| UnityPoint Health – Methodist Proctor CARE | Page # 1 of 9 | Section: Laboratory | Policy #: P-12 |
| | Approved by:  | | Date: 10/14/15 Review by: 10/14/16 |
| COORDINATION | Supersedes: 11/04, 12/07, 11/09, 11/10, 8/12, 6/13, 2/14, 4/14 | | |
| | Date Revised: 10/15 | | |
| | Reviewed by Pathologist: Devendra Trivedi MD  | | |
| | Reviewed by Pathologist: Adam Quinn, DO  | | |
| | Primary Responsible Parties: Rich Borge | | |
| | Secondary Responsible Parties: Ed Rinne | | |
| Joint Commission Standard: PC | | | |
| SUBJECT: VENIPUNCTURE TECHNIQUE | | | |

- I. POLICY
Blood is collected from a vein by vacutainer, syringe, or butterfly technique with minimal trauma to the patient. Specimens must be handled according to this policy to obtain accurate laboratory results.
- II. PURPOSE AND STANDARD
To establish a standardized approach to proper specimen collection by venipuncture in order to reduce error in collection, minimize patient complications, and provide the most accurate specimen for testing.
- III. POLICY SCOPE:
This Policy applies to UnityPoint Health Methodist | Proctor hospital and any of its employees and/or members of the medical staff engaging in the procedures described herein.
- IV. EQUIPMENT
 - A. Appropriate supply of collection tubes for tests ordered:

| Tube Color | Additive |
|----------------------------------|------------------------------------|
| BACTEC Plus–Gray flip cap | Aerobic Blood Culture |
| BACTEC Plus– Purple flip cap | Anaerobic Blood Culture |
| BACTEC PEDS Plus – Pink Flip Cap | Pediatric Blood Culture |
| Light Blue | 3.2% Sodium Citrate |
| Gold Top | Serum Separator, clot activator |
| Red Top | Serum Tube, non-additive |
| Green Top | Sodium Heparin or Li Heparin |
| Lavender, dark Purple | K2 EDTA |
| Pink Top | K2 EDTA, Blood Bank |
| Tan Top | K2EDTA |
| Gray Top | Sodium Fluoride, Potassium Oxalate |

Refer to specific departmental requirements concerning additives or special handling (i.e. drawn on ice, prot

Refer to specific departmental requirements concerning additives or special handling (i.e. drawn on ice, protected from light, specialty tubes, etc.)

Note: All blood collection devices and tubes will be stored and handled according to manufacturer's instructions.

- B. Latex Free Tourniquet
- C. Disposable gloves
- D. Alcohol Prep or Chloraprep FREPP 1.5mL Applicator or Castile Soap Towelette
- E. Gauze (2 x 2 pads)
- F. Adhesive bandages, micropore tape, or Co-Flex
- G. Puncture resistant sharps container
- H. Patient Labels
- I. Marking Pen
- J. Collection System:
 - 1. Vacutainer Holder with Safety Needle (21 and 22 gauge needles available in 1¼ inch)
 - 2. Vacutainer Holder or Syringe with Safety Lock Butterfly Needle (23 and 25 gauge available in ¾ inch)
 - 3. Syringe with Safety Needle (23g x 1 in, or 25g x 5/8 inch)
- K. Blood Transfer Device (for Syringe system)
- L. Fluid Resistant Gown, if appropriate
- M. Particulate Respirator or mask; if appropriate
- N. Goggles/Face Shield, if appropriate

V. PROCEDURE

Use Standard Precautions and appropriate Personal Protective Equipment to prevent skin and mucous membrane exposure according to M-01 Standard Infection Prevention and Control Practices Policy in Care Coordination Manual.

- A. Review patient orders and prepare supplies accordingly.
- B. Select appropriate collection tubes and understand minimum volume requirements, specialty tubes, timing, and handling/transport details.
 - 1. Utilize Laboratory User's Manual for requirements.
 - 2. Phone the laboratory department for additional help.
 - 3. Collection of time-sensitive tests:
 - a) For a timed pre-dose medication level, check with nursing staff to ensure that the dose was not given. If the dose was given, the collect times may need to be re-scheduled.
 - b) If the order is for a timed post-dose medication level, check with nursing to ensure that the drug was administered and/or that the drug infusion is complete. If the drug was not administered or if the infusion is not complete, nursing must re-schedule the order.
- C. Handwash upon entering patient room or collection area, according to Care Coordination Policy M-5 *Hand Hygiene*.
- D. Be alert to isolation rooms or special isolation notices on the patient's room door. Read the isolation sign and follow the instructions carefully. Check with the patient's nurse if instructions are unavailable.
- E. If patient is not available or out of room for procedures, inform nurse to phone when they have returned. In the event of STAT orders, they may request you to draw patient in location of procedure being performed.
- F. Approach patient, introduce yourself and inform patient you are there to collect blood.
- G. Ask for patient permission to perform collection. If they hesitate or refuse, place emphasis on the point that his/her physician has ordered the test and it is needed. If gentle persuasion does not work, report the problem to the nurse. The nurse may be able to persuade the patient. Ask the nurse to contact the physician and then inform the laboratory of his decision. **Do not** collect blood from a refusing patient without a court order
- H. Perform patient identification (minimum of two identifiers)

| Identification Procedure | Identifiers | Matched Against |
|---|--------------------------------------|--|
| Patient with Hospital Identification Band | First and last name Date of Birth | Patient verbal with ID band and patient order labels or order screen. |
| | Medical Record number or CSN | ID band and patient order labels |
| INPATIENT WITHOUT ID BAND: Request nurse to have hospital ID band placed on patient prior to specimen collection. Do not collect until this has occurred. If collection is requested STAT, utilize Blood Bank Identification Band before proceeding with collection, refer to Blood Bank ID Bank Procedure PHLEB-10.. | | |
| Patient without Hospital Identification Band (outpatient, MMG collections, health fairs, etc.) | First and last name Date of Birth | Patient verbal with physician's written orders, requisition, or chart. |

- I. Inquire if patient is fasting if required for testing, or if they are latex sensitive.
 - 1) Latex sensitive patient will have a green armband and green "Latex Sensitive" sign placed on their door. Be sure you use latex-free tourniquet, gloves, and bandage when necessary.
- J. Assemble supplies.
 - 1) Tourniquet
 - 2) Gloves
 - 3) Gauze pads
 - 4) ChlorPrep /alcohol/castile soap
 - 5) Collection System items
 - 6) Appropriate Collection Tubes for tests ordered
 - 7) Bandage (micropore tape, band-aid, or co-flex)
- K. Position patient.
 - 2) Patient's lying down: Ask to lie comfortably on back, extending arm in a straight line from shoulder to wrist. Place pillow under their arm for additional support.
 - 3) For seated patients: position with arm fully supported, extended straight on armrest, keeping elbow as straight as possible, without hyperextending.
 - 4) Ask for assistance from nurse or phlebotomist with patients that are unable or unwilling to remain still.
- L. Apply tourniquet 3-4 inches above location. It may be placed over patient gown, light clothing, or gauze to eliminate pinching of skin.
- M. Have patient clench fist, without pumping. If tourniquet is applied for beyond one minute, remove and reapply after two minutes.
- N. Assess possible vein locations, select site, and determine blood collection system most appropriate.
 - 1) The preferred veins are the median cubital and cephalic veins located in the antecubital fossa.
 - 2) Wrist and hand veins are also acceptable but may require the use of a syringe or butterfly apparatus.
 - 3) Ankle or foot veins can be used only if approved by the attending physician.
 - 4) Avoid areas with extensive scarring, the presence of hematomas, or fistulas.
 - 5) Do not draw from side of which mastectomy was performed, unless physician approves.
 - 6) Palpate (probe with a pushing motion) and trace the path of veins several times with the index finger. Differentiate veins which feel spongy and bouncy from rigid tendons and pulsating arteries.
 - 7) If a vein is not readily apparent, one of the following methods may be used to make a vein more prominent:
 - a) Massage the arm upward from wrist to elbow.
 - b) Tap the vein site sharply with the index and second finger a few times.
 - c) Apply a warm damp wash cloth or heel warming device to the site for 3- 5 minutes.

- d) Lower the extremity over the bedside for 1-2 minutes. Check the opposite arm's veins, if possible.
 8. If intravenous (IV) site is in use:
 - a) Collect from other arm or at least 3 inches below IV.
 - b) If you must draw from above IV site, have nurse turn off IV for at least 2 minutes, place tourniquet between IV site and draw site.
 9. Release tourniquet after selecting site.
- O. Assemble Collection System items:
1. Vacutainer Holder with Needle:
 - a) Twist and remove needle cap.
 - b) Screw holder onto needle until it fits securely.
 2. Vacutainer Holder or Syringe with Safety Lock Butterfly Needle:
 - a) Remove set from package.
 - b) Thread the luer adapter into Holder until it fits securely.
 3. Syringe with Safety Needle:
 - a) Remove needle from package.
 - b) Thread needle luer adapter into Syringe until it fits securely.
- P. Position Supplies where they are readily accessible. **Never place the tray on the bed, eating table or floor**; instead move a chair or table to the bedside. If using a cart, the carts are always to be within arm's reach at bedside, unless in a isolation room, then the cart is to remain behind the taped line.
- Q. Put on gloves.
- R. Cleanse site.
1. Alcohol pad should be used in circular motion from center to periphery. Allow to dry completely.
 2. Use betadine or castile soap on patients allergic to alcohol, or in the case of collection of ethanol levels.
 3. FOR BLOOD CULTURE COLLECTION:
 - a) Pinch ChloraPrep Frepp applicator wings once to activate and release antiseptic.
 - b) Holding horizontally, allow solution to load sponge.
 - c) Gently press applicator against site.
 - d) Once solution is visible on skin, use back-and-forth strokes for minimum of 30 seconds.
 - e) Allow to air dry for approximately 30 seconds.
 - f) Note: ChloraPrep is not to be used on patients less than 2 months of age. In these cases utilize betadine or 70% alcohol in circular motion and allow to air dry.
 - g)
- S. Reapply tourniquet, do not touch site after cleansing. If you do, it must be re-cleansed. Have patient form fist and hold it.
- T. Perform venipuncture.
1. Remove needle cap/sheath, inspect closely for defects.
 2. For Syringe system, break plunger seal, advance it fully forward, expelling all air from barrel before use.
 3. Hold the patient's arm firmly distal to selected site.
 4. Anchor the vein with thumb 1-2 inches below site. Avoid anchoring above site to reduce needle stick injury risk.
 5. Inform patient that you are about to perform collection.
 6. Bevel up, puncture vein with needle at angle of 30 degrees or less. If using butterfly device, hold a wing of the butterfly against the patient's arm to steady the needle while either the vacutainer tube or syringe is filling with blood.
 7. Keep needle as stable as possible, keep back of hand anchored against patient arm.
 8. Follow collection tube order of draw, minimum draw requirements:

| Tube Order | Additive information | Special Volume Requirements |
|--|--|--|
| 1. Blood Cultures | <ul style="list-style-type: none"> • Aerobic first, then Anaerobic • Or Peds | <ul style="list-style-type: none"> • 8-10 mL fill per bottle, adult • Pediatric, 1-3 mL • <u>Remove flip-cap, cleanse rubber stoppers with alcohol wipes.</u> |
| 2. Light Blue | Sodium Citrate | MUST BE FILLED TO MINIMUM FILL LINE ON TUBE. SHORT DRAWS NOT ACCEPTED. |
| 3. Red | Non additive Serum | |
| 4. Gold | SST Gel with Clot Activator | |
| 5. Green | Heparin, Lithium or Sodium | |
| 6. Purple, Pink , or Tan | K2 EDTA | Pink needs 5mL for blood bank. |
| 6. Gray | Sodium Fluoride/ Potasium Oxalate | |
| <p>NOTES:</p> <ul style="list-style-type: none"> • If using Safety-Lok Butterfly device, and a sodium citrate tube is the first tube required, draw a small volume into extra non-additive or sodium citrate tube as discard, then collect sodium citrate tube for specimen. • If drawing below IV site, draw one discard tube with 5mL prior to required collection tubes. • If other specialty tubes are required, draw in order according to tube additive | | |

9. Collect specimen:

a) For Vacutainer Holder system:

- 1) Push first tube onto needle. Carefully hold the vacutainer holder to prevent needle movement.
- 2) Once blood appears into first tube, ask patient to release fist.
- 3) Allow tube to fill to appropriate volume, until vacuum is exhausted. Pull back and remove.
- 4) Avoid tilting
- 5) Push subsequent tube onto needle.
- 6) While each tube fills, gently mix the previous tube by inversion 8-10 times.
- 7) Remove last collected tube.
- 8) Release tourniquet.
- 9) Retrieve gauze, carefully withdraw needle from site, applying digital pressure to site using gauze until bleeding stops.
- 10) Activate needle safety device:
 - (a.) Eclipse: Position thumb on orange safety shield pad, push shield forward to cover needle. An audible click should be heard. Lock into place, inspect that it is activated.
 - (b.) Butterfly: Hold tubing in hand. grasp either wing with one hand and grip area of yellow safety shield base with other hand, slide wings back into rear slot until click is heard.
- 11) Immediately dispose of needle into sharps container, do not transfer hands or hand-off to another employee.

b) For Syringe technique:

- 1) Once vein is entered, a flash of blood will appear in the syringe hub.
- 2) Ask patient to release fist.
- 3) Withdraw the desired amount of blood by holding the barrel of the syringe firmly in one hand while using the other hand to gently pull back on the plunger. Do not force flow, it can hemolyze sample
- 4) The hand holding the syringe barrel should remain braced on the patient's arm to prevent movement of the needle.
- 5) When desired amount is collected, release tourniquet.

- 6) Retrieve gauze, carefully withdraw needle and apply digital pressure to site using gauze until bleeding stops. You may have patient apply pressure for you if you are there to monitor.
 - 7) Activate SafetyNeedle: Push lever arm completely forward until needle tip is completely covered. Visually confirm lever arm has fully advanced.
 - 8) Acting quickly in order to prevent sample clotting, remove needle from syringe and dispose of into sharps container.
 - 9) Attach Blood Transfer Device to syringe.
 - 10) Using order of draw, push first collection tube onto transfer device, allow to fill until vacuum is exhausted and tube stops filling.
 - 11) Remove tube, push subsequent tube onto needle.
 - 12) Mix all tubes by gently inversion 8-10 times.
 - 13) When all required tubes are filled, remove last tube and dispose of transfer device with attached syringe into sharps container.
- c) If you have difficulty obtaining blood:
- 1) Change the position of the needle. Feel gently for the needle, if it has penetrated too far into the vein, pull it back a bit. If it has not penetrated far enough, advance it farther into the vein. Rotate the needle half a turn.
 - 2) Try another tube, as the one being used may not have had sufficient vacuum.
 - 3) Loosen the tourniquet. It may have been applied too tightly, thereby stopping the blood flow.
 - 4) Probing is not recommended as it is painful to the patient. Attempt to collect the specimen from another site.
- d) **If you are unable to obtain specimen after 2 attempts:**
- 1) Inform patient and nurse that another phlebotomist or nurse will be back to attempt.
 - 2) Arrange for another person to perform venipuncture.
 - 3) If after 4 attempts total, specimens are not obtained, the responsible nursing personnel or physician will be informed so that an alternate method of collection can be considered.
 - 4) Write explanation of attempts made, by whom, date/time, time/name of nurse notified, and physician's name. Physician may suggest limited testing, microcollection technique, or perform arterial puncture. Give to Lead Tech or Technical Coordinator to enter into RL Solutions.

U. Apply bandage once bleeding subsides.

1. Obtain fresh piece of gauze.
2. Fold and cover puncture site.
3. Cover with adhesive bandage, tape, or co-flex bandage.
4. Inform patient to keep bandage on for at least 15 minutes.
5. If bleeding persists for more than 5 minutes or hematoma forms, notify nurse and maintain pressure on site.
6. Do not apply a bandage onto a *patient less than 2 years of age*, as it could become a choking hazard.

V. Immediately label patient specimens at the bedside.

1. A lab generated label or chart label will include all necessary information.
2. Document your initials or Tech Code and date/time of collection on label.
3. Document on label if specimen was collected below IV site.
4. If blood cultures were collected, document on label location of collection site.
5. If computer generated labels are not available, you must *handwrite* this minimum information on each tube:
 - a) Patient First and Last Name
 - b) Date of Birth and/or Medical Record Number
 - c) Collection Date and Time
 - d) Collector's initials

6. Avoid labeling over the colored edge of collection tube label.
 7. Position labels in a straight, vertical manner with patient name closest to cap.
 8. Additional labels may accompany specimens to lab.
 9. **DO NOT PRE-LABEL UNDER ANY CIRCUMSTANCES. The label must be affixed to the specimen tube in the presence of the patient.**
- W. Follow special handling instructions immediately after collection. This includes storing on ice, protection from light, and/or immediately delivery to lab.
- X. Discard of any waste. Any items with visible blood contamination must be discarded in marked biohazard bags. Other waste may be discarded in patient wastebasket.
- Y. Raise bedrails, lower bed, and return any moved tables back to their original locations.
- Z. Gather all tubes, extra labels for delivery to lab.
- AA. Thank patient for their cooperation.
- BB. Wash hands upon exiting room according to Hand Hygiene Policy.
- CC. If IV had been turned off, inform nurse collection is complete and that it may be restarted.
- DD. Delivery specimens to laboratory processing area.

Procedural Notes

1. Do not enter the room while the doctor is visiting with the patient; come back at another time. If you have a STAT order, politely ask if the physician would like the sample drawn now or at another time.
2. Take special care when collecting blood from semi-conscious or comatose patients. Anticipate unexpected movements while introducing the needle or while it is in place in the arm. Gauze should be readily available and the tourniquet quickly released in the event the needle is violently removed or re-positioned. Inform the nurse who will examine the area for possible damage.
3. Best practices suggest that specimen collection not be performed during blood transfusions, however if the physician insists, collections may be performed. Note specimen was collected while blood was being transfused.
4. **When collecting blood from patients under 14 years of age**, obtain the patient's weight. Do not collect more than the recommended maximum volume of blood at any one time. See Diagram A. If more than the allowable volume is required, the physician must be notified for consultation. The orders may be prioritized, divided, etc... The physician will make the final decision.

Problem-Solving Tips

1. Hematoma formation:
 - a) Remove the tourniquet and withdraw the needle from the patient's arm immediately.
 - b) Place three to four gauze squares over the hematoma and apply pressure for 2-5 minutes.
 - c) Apply a pressure bandage (fold a square gauze and place under co-flex) to venipuncture site.
 - d) Inform the patient that they may have a black and blue mark for a few days, notify nurse.
2. Weakness, Dizziness or Nausea
 - a) Remove the tourniquet and withdraw the needle from the patient's arm.
 - b) Make the patient as comfortable as possible. (If sitting, have the patient bend their head toward their knees.)
 - c) Instruct the patient to breath deeply and slowly.
 - d) Apply a cold compress to the patient's forehead, if it seems necessary.
 - e) Offer a cool glass of water.
 - f) If an outpatient, stay with the patient until completely recovered. If necessary, call a pathologist to check the patient.
 - g) If an inpatient, report the incident to a nurse.
3. Fainting:
 - a) Remove the tourniquet and withdraw the needle from the arm immediately, apply pressure.
 - b) If the patient is sitting, hold the patient in the chair.

- c) Administer an ammonia inhalant. If spirits are strong, wave it under the patient's nose briefly.
 - d) Apply a cold compress to the patient's forehead and/or back of neck.
 - e) If an outpatient, remain with the patient until completely recovered.
 - f) If unresponsive, dial 3333, and request the Rapid Response Team to your location, inform them if infant, pediatric, adult, or non-patient.
 - g) If an inpatient, report the incident to a nurse.
4. Vomiting
- a) Remove the tourniquet and withdraw the needle from the arm immediately.
 - b) Provide the patient with a suitable receptacle and tissues.
 - c) Give the patient a glass of water to rinse out his/her mouth.
 - d) If an outpatient, remain with the patient until he/she is completely recovered or call a pathologist if help is needed.
 - e) If an inpatient, report the incident to a nurse.
5. Convulsions
- a) Call for **HELP** immediately.
 - b) Try to prevent the patient from injuring himself/herself. (During severe seizures, some individuals exhibit great muscular strength and are difficult to restrain.)
 - c) If an outpatient, call a pathologist or if a pathologist is not available, call ER and have the patient seen by an ER physician. If the collection is taking place at a location outside of the main hospital, call 911.
6. Cardiac or Respiratory Difficulties
- a) Call a **Code Blue** by dialing 333 (Emergency Care Team) or turning on code blue light switch.
 - b) If collection is occurring at location outside of main hospitals, call 911.

COMMENT: Incident reports should be filled out on **ANY** patient with weakness, dizziness, fainting, or convulsions.

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 Strasinger, S., DeLorenzo, M., (1996). Phlebotomy Workbook for the Multi-Skilled Profession. Davis Co.

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Medical Director Approval: Devendra Trivedi MD 08/06/08

Reviewed



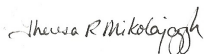

| Coordinator/Manager | Date | Medical Director | Date |
|---|-----------|--|----------|
|  | 7/2/10 |  | 7/2/10 |
|  | 11/1/2010 |  | 12/30/10 |

Diagram A. Guide for maximum blood draw volume on any patient under the age of 14.

| Patient Weight | | Max. amount to be drawn at one time, mL | Max. amount to be drawn during hospital stay (1 month or less, cumulative) mL |
|----------------|-----------|---|--|
| Pounds | Kilograms | | |
| 6-8 | 2.7-3.6 | 2.5 | 23 |
| 8-10 | 3.6-4.5 | 3.5 | 30 |
| 10-15 | 4.5-6.8 | 5.0 | 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 | 10 |
| 36-40 | 16.4-18.2 | 10 | 130 |
| 41-45 | 18.6-20.5 | 20 | 140 |

| REVISION HISTORY | | | | |
|------------------|--|----------------|----------------|-----|
| Rev | Description of Change | Author | Effective Date | |
| 0.1 | Formatting changes, added more descriptive steps for safety devices and their use. Changed patient specimen labeling to not include patient location as identifier option. | T. Mikolajczyk | 11/01/2010 | |
| 0.2 | Changes made to reflect UnityPoint Peoria (Methodist and Proctor Campuses) combined process. | R. Borge | 9/25/15 | |
| | 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 | 27 |
| | 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 |