

LABORATORY DEPARTMENTAL POLICY

SUBJECT:		DATE OF ORIGIN:
		DATE OF REVISION: 10-2015
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PURPOSE: To establish criteria for the correct collection of blood specimens by venipuncture in both outpatient and inpatient settings.

GOAL: To reduce errors by providing standards for blood collection by venipuncture.

INTRODUCTION: Reducing preanalytical errors such as incorrect patient ID, incorrect order of draw, incorrect use of additives, etc., will ensure quality test results. All human blood specimens are to be treated as infectious and handled according to "Standard Precautions". (see Trinity Policy IC-8 titled Standard Precautions.)

SUPPLIES:

1. Blood Collection Trays are available for use while on the various nursing departments.
2. Utility carts are available in the outpatient laboratory phlebotomy area for storing supplies.
3. Disposable gloves are available in the laboratory and in the nursing units.
4. Needles of various size are available for use with Evacuated Blood Collection Systems:
 - 23G x 1 1/2 inches
 - 21G X 1 1/2 inches
 - 21G X 1 inch
5. Needle holders with safety shield.
6. Winged collection sets
7. The following evacuated tubes are available for routine laboratory testing, others may be available upon request in special circumstances:

a. Red Stopper	6 mL	No Additives
b. Red Stopper	4 mL	No Additives
c. Gold Stopper	5 mL	Clot Activator/Gel separator
d. Light Green Stopper	3.0 mL	Lithium Heparin/Gel separator
e. Dark Green Stopper	4 mL	Sodium Heparin
f. Lavender	4 mL	K2 EDTA
g. Pink	6 mL	K2 EDTA
h. Light Blue	2.7 mL	Sodium Citrate 3.2%
i. Black	1.0 mL	Sodium Citrate
j. Dark Blue	7 mL	No Additive
k. Dark Blue	6 mL	K2 EDTA
l. Grey	4 mL	NaFl/Potassium Oxalate
m. White	5 mL	K2 EDTA/Gel Activator
n. Yellow	8.5 mL	ACD Solution A
o. Yellow	7 mL	ACD Solution B
p. Dark Green Stopper	6 mL	Lithium Heparin
8. Syringes of various sizes
9. Single-use disposable latex-free tourniquets.
10. Antiseptics:
 - a. 70% Isopropyl Alcohol pads

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- b. Providone-Iodine Prep Pads
- c. ChloraPrep one step Frepp Applicators
- d. Blood Culture Prep Kit
- 11. Gauze pads
- 12. Sharps Containers
- 13. Bandage

PROCEDURE:

- I. PREPARE : The following information is available on the test request:
(Mediatech labels)
- A. Patient name and Date of Birth
 - B. Identification Number (Medical Record number)
 - C. Date and Time specimen is to be obtained.
 - D. Accessioning number (0412:H126)
 - E. Ordering physician's name
 - F. Specimen requirements
 - 1. Tube to be drawn
 - 2. Special requirements such as place sample on ice after collection.
 - G. Department/Instrument where the testing is performed

II. APPROACH THE PATIENT:

- 1. Perform Hand Hygiene
- 2. Identification of the patient is crucial. Trinity policy CC-21 addresses proper identification of patients.
- 3. Address the patient by name.
- 4. Introduce yourself, and tell the patient you are there to draw some blood for tests that the doctor ordered. If the patient has questions about what labwork is being performed, refer them to their doctor.
- 5. Be considerate and respectful. (For instance, do not barge into a sleeping patient's room and turn on the lights)
- 6. Review the Trinity policy RI-13 "Patient Rights".

III. POSITION PATIENT

- 1. If patient is in a chair, have the patient position his/her arm on the armrest, and extend arm forward. The arm should be supported by the armrest, and not significantly bent at the elbow. Avoid hyperextension of the arm.
- 2. If the patient is lying down, have the patient extend his/her arm to form a straightline from shoulder to wrist. If needed, place a pillow under the arm for additional support.

IV. APPLY THE TOURNIQUET

- 1. Tourniquet application for preliminary vein selection should not exceed one minute to avoid stasis and hemoconcentration.
- 2. Wrap the tourniquet around the arm 3 to 4 inches above the venipuncture site.
- 3. Have the patient make a fist so the veins become more prominent. Do not have the patient "pump" their fist because this can cause changes in certain analytes.
- 4. Select the vein:
 - a. The median cubital vein is the preferred site. Attempt to locate this vein on either arm before considering alternative veins.
 - b. The cephalic vein is the next choice.
 - c. The basilic vein, due to its proximity to the basilic artery should only be used if no other vein is prominent.
 - d. Veins on the back of the hand are also acceptable for

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- venipuncture.
- e. Areas to avoid:
 - 1. Extensive scarring
 - 2. Mastectomy
 - 3. Hematoma - if no other vein is available, draw below the hematoma
 - 4. Arm with an IV (see separate policy)
 - 5. Cannula
 - 6. Fistula
 - 7. Vascular Graft
- f. To locate veins, palpate and trace the path of the vein with the index finger.
- 5. If the tourniquet is applied for preliminary vein selection, it should be released and reapplied after two minutes.
- V. ASSEMBLE SUPPLIES
 - 1. Appropriate needle or butterfly winged set
 - 2. Holder or syringe
 - 3. Appropriate tubes
 - 4. Alcohol pad, gauze
- VI. PUT ON GLOVES
- VII. CLEANSE VENIPUNCTURE SITE
 - 1. For regular blood collection, use a 70 % alcohol pad.
 - 2. For blood culture collection, see specific procedure.
 - 3. If the site is touched, it should be cleansed again.
- VIII. PERFORM THE VENIPUNCTURE
 - 1. Thread the appropriate needle onto the holder or syringe.
 - 2. Make sure the venipuncture site is in a downward position.
 - 3. Hold the patient's arm firmly below the venipuncture site. Use your thumb to pull the skin taut to anchor the vein 1 to 2 inches below the intended venipuncture site.
 - 4. Inform the patient that the venipuncture is about to occur.
 - 5. With the bevel up, insert the needle at an angle of 30 degrees or less. Keeping the needle stable, push the first tube onto the needle. If a syringe was used, gently pull back the plunger while keeping the needle stable until the desired amount of blood is withdrawn.
 - 6. Release the tourniquet as soon as possible after the blood begins to flow.
 - 7. Allow the tube to fill until the blood flow ceases.
 - 8. Remove the tube from the holder. If needed, insert the next tube. Continue removing and applying tubes until all specimens have been collected. Tubes with additives should be mixed by inverting 5 to 10 times.
- IX. ORDER OF DRAW or FILL (use the same order of draw for both syringe and evacuated tube collection)
 - 1. Blood Culture tube
 - 2. Coagulation tube*
 - * When using a winged collection set and a coagulation tube is the first tube to be drawn, a plain red tube should be collected first.
 - 3. Serum tube with or without clot activator with or without gel.
 - 4. Heparin tube with or without gel
 - 5. EDTA
 - 6. Other additive tubes
- X. RELEASE THE TOURNIQUET
- XI. PLACE THE GAUZE PAD
 - 1. A clean gauze pad should be placed over the venipuncture site.
- XII. REMOVE THE NEEDLE

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1. Remove the needle and activate the safety mechanism.
2. Dispose of the unit into a sharps container.
3. Place the gauze over the site and apply mild pressure.
* If arterial puncture is suspected, you must apply pressure for at least 5 minutes.
4. Check that the bleeding has stopped.

XIII. APPLY BANDAGE

1. For inpatients use paper tape, unless the patient has visible signs of skin tearing.
2. For inpatients with visible signs of skin tearing, you may use COFLEX. If COFLEX is used, you must instruct the patient to remove the bandage in 15 minutes.
3. If the patient is unable to follow instructions, you must alert the patient's nurse that you have applied COFLEX, and they must remove it in 15 minutes. (you should document an internal comment on returning to the lab).
4. Applying COFLEX:
 - a. COFLEX does not need to be tight around the patient's arm
 - b. Place gauze over the site
 - c. Place COFLEX over the gauze
 - d. Place 2 fingers on COFLEX and gauze
 - e. Wrap COFLEX 1 1/2 times around arm
 - f. Remove your fingers
 - g. Instruct patient to remove the COFLEX bandage in 15 minutes

*The phlebotomist should watch for excessive bleeding. If a hematoma develops or bleeding persists longer than 5 minutes, a nurse should be notified.

XIV. LABEL SPECIMENS

1. The patient and the patient's blood must be positively identified before leaving the patient's bedside according to the specimen labeling procedure.

XV. DISPOSE OF CONTAMINATED MATERIALS AND SUPPLIES IN DESIGNATED CONTAINERS

XVI. PERFORM HAND HYGIENE

XVII. THANK PATIENT

NOTES:

1. Special handling instruction must be followed, if applicable:
 - a. Place specimen on ice
 - b. Protect from light by placing tube in amber transport bag.
2. To prevent a hematoma:
 - a. Make sure the needle fully penetrates the uppermost wall of the vein.
 - b. Remove the tourniquet before removing the needle.
 - c. Use the major superficial veins.
 - d. Before bandaging the arm, be sure bleeding has stopped.
 - e. Apply light pressure with the gauze when bandaging.
3. To prevent hemolysis
 - a. Allow the site to air dry after cleansing with alcohol.
 - b. Never draw through a hematoma.
 - c. If using a syringe, make sure needle is fitted securely.
 - d. Avoid drawing the plunger of a syringe back too forcibly.
 - e. Invert additive tubes gently.
4. When a specimen cannot be obtained:
 - a. It may be necessary to change the position of the needle
 1. If the needle has penetrated too far into the vein, pull back a bit.

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2. If the needle has not penetrated enough, advance it farther into the vein.
 3. Try another tube to ensure the tube is not defective.
 4. Probing is not recommended, it is painful to the patient.
 5. Please see Trinity Policy TX-64 that discusses the process for failed venipuncture attempts.
5. Blood draw volumes minimized by:
- a. Increasing the number of point of care tests performed, using a fingerstick sample to perform test instead of drawing a whole tube of blood to send to the lab.
 - b. Doing a thorough search in our LIS to see if blood can be used from an earlier draw whenever there is an add-on test requested to prevent patient from being drawn again.
 - c. Designing our LIS system to identify minimum volumes of blood to be drawn for all tests and print out the appropriate number of labels to match the different types of blood tubes to be drawn.
 - d. Communicating with nurse managers and staff education to improve blood draw techniques to minimize hemolyzed, clotted and unsatisfactory specimens to prevent redraws.
 - e. Assuring the competence and accuracy of our phlebotomists by prompt communications when specimen collection problems occur and providing solutions and corrective action when needed.
 - f. Saving blood specimens in the proper environment for the maximum usage time span to increase opportunities for not having to redraw a specimen.

Trinity Health System, Department of Laboratories Standards of Practice May 2006. NCCLS Standard H3-A5 "Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture"."Phlebotomy Handbook" 5th Edition . Revised November 2008. Revised July 2009