

I. Purpose of Procedure (Principle)

This document describes the Dartmouth Hitchcock (D-H) Blood Donor Program (BDP) procedure for the selection and preparation of veins for venipuncture. This procedure is written to ensure that each venipuncture is performed safely and properly, in accordance with Food and Drug Administration (FDA), American Association of Blood Banks (AABB) and Occupational Safety and Health Administration (OSHA) regulations standards and guidelines.

II. Scope

This applies to all staff employed in the Transfusion Medicine Service that have been trained and found competent to perform this procedure at DHMC.

III. Definitions NA

IV. Specimen Requirements NA

V. Equipment, Reagents and Required Records/Forms

A. Personal Protective Equipment

All employees must adhere to Universal Precautions: Treat all body specimens as if they are potentially infectious. Use personal protective equipment. Refer to the policies for Personal Protective Equipment (PPE) in the DHMC Health and Safety Manual.

1. Laboratory coat
2. Gloves
3. Glasses, goggles or face shield –if there is a possibility of a splash or aerosolization.

B. Equipment

- A. Refer to appropriate related donor or therapeutic apheresis procedures
- B. Refer to site specific Post Donation Instructions
- C. Form: Reaction Management Form
- D. Blood Pressure Cuff or Tourniquet
- E. Blood sample tubes
- F. Hand Grip
- G. 2% Chlorhexidine Gluconate/ 70% Isopropyl Alcohol One Step antibacterial prep
- H. Needle(s)

- I. Sterile 2 x 2 gauze bandages
- J. Tape

C. Reagents NA

D. Required Records/Forms

- A. Refer to appropriate related donor or therapeutic apheresis procedures
- B. Refer to site specific Post Donation Instructions
- C. Form: Reaction Management Form

VI. Equipment Calibration/Process Validation NA

VII. Quality Control/Process Control NA

VIII. Procedure and Calculations

A. SAFETY

- 1. Follow all biosafety procedures when handling potentially infectious material.
- 2. Disposable supplies used must be disposed of by the hospital as per their infectious waste protocol.

B. VENIPUNCTUREPROCEDURE

- 1. Reception of Donor or Patient
 - a. Greet the donor or patient in a cheerful manner. The phlebotomist should identify themselves by name.
 - b. Verbally confirm the identity of the donor by asking them to state their name and date of birth matching all information given to the Eldorado donor registration profile. Resolve any and all discrepancies before proceeding.
 - c. At the start of the procedure, ensure that the donor or patient is comfortable and that they do not have any food or foreign items in their mouths. Instruct the donor or patient to loosen their collar, if applicable.
 - d. Keep records near donor or patient at all times. This action will help to prevent any mix-up of donor paperwork, blood products or blood sample tubes before and after the procedure or transfusion.
 - e. Prior to any blood collection, ensure the blood product container(s) and the donor samples have been labeled appropriately with the International Society Blood Transfusion (ISBT) labels.
 - f. Prior to any blood collection, verify identical blood identification numbers have been attached to (but not limited to the following):
 - (1) Consent forms
 - (2) Other related procedure records
 - (3) Product bags
 - (4) Blood Sample tubes
- 2. Vein Selection
 - a. While determining which arm to use for the procedure, both arms should be tactfully inspected for evidence of illicit intravenous drug use. (Refer to the appropriate donor registration and screening policies.)

- b. Checking both arms will also allow the phlebotomist to determine which vein is best to accommodate a large bore needle for the length of the procedure.
- c. Venipuncture must not be above antecubital area, the skin at the venipuncture site must be free of lesions.
- d. If performing a two arm procedure, the best vein of either arm should be used as the DRAW site.

3. Vein Inspection:

- a. All whole blood collection and apheresis collection disposable sets in use in the donor room are latex free.
- b. Gloves and lab coat must be worn when carrying out the venipuncture and when exposed to blood or body fluids. Change gloves prior to each venipuncture and whenever gloves become soiled.
- c. Position the donor or patient so that their arm is positioned comfortably, allowing them room to move in the chair or bed.
 - (1) Place equipment where it is readily available but is not in danger of being upset by the patient or donor.
 - (2) Extend the arm flat or at an approximately 20 degree angle from body with the palm of the hand up.
- d. Apply tourniquet or pressure cuff approximately 2 inches above antecubital area.
- e. If a pressure cuff is used, inflate to 30-60 mmHg pressure.

NOTE: Deep veins may require additional pressure. However, DO NOT exceed the diastolic pressure of the donor or patient.

- f. Instruct donor or patient to squeeze a hand gripper several times and hold to distend the vein.
- g. Palpate the distended veins. Select the best vein. Veins in antecubital area, forearms and hands are acceptable for donors and patients.
- h. Check for arterial beat (it is an artery if a pulse is felt). DO NOT USE AN ARTERY.
- i. If no vein is suitable in one arm, check the other arm in same manner or request another phlebotomist's opinion, if available.
 - (1) For Blood Donors: If unable to find a suitable vein in either arm, defer the donor and make a notation in the comments tab under the Eldorado donor profile.
 - (2) For Patients: If unable to find a suitable vein(s) in a patient, consult with the Clinical Coordinator and patient's physician.

4. Skin Preparation

- a. Ask each donor or patient if he/she is allergic to chlorhexidine.
- b. Use the ChlorPrep One-Step Applicator
 - (1) Open sterile blister pack
 - (2) Remove applicator with aseptic technique
 - (3) Squeeze the side handles together to break ampoule; once ampoule pops, you may discontinue squeezing as solution will flow into foam head.
 - (4) Place applicator foam head onto site and press down once or twice to prime applicator.
 - (5) For 30 seconds, apply solution in a back, forth, up and down motion. Scrub area at least 1.5 inches in all directions from intended site of venipuncture (at least 3 inches in diameter).
 - (6) Allow solution to dry for approximately 30 seconds; do not touch venipuncture site once the site has been cleansed.

- (7) Discard used applicator.
- (8) DO NOT TOUCH PREPPED AREA If prepped area becomes contaminated, prep must be repeated.
- (9) Place a sterile 2 x 2 gauze on cleansed venipuncture site.
- (10) DO NOT WIPE with sterile 2 x 2 gauze.

5. Performing Venipuncture:

- a. Re-apply the tourniquet or inflate the pressure cuff to 30-60 mmHg. The pressure of the tourniquet or pressure cuff should not obliterate the radial pulse.
- b. Have the donor or patient open and close their fist several times and then hold the grip tightly.
- c. Remove the protective cap from the needle.
 - (1) Quickly examine the needle for defects.
 - (2) Once cap is removed, venipuncture should be performed within approximately 20 seconds.
- d. Pull the skin taut over venipuncture site in the direction the vein runs, making sure not to retouch the area that has been disinfected.
 - (1) Avoid excessive pressure to avoid thinning out the vein.
 - (2) Inform donor that you are ready to perform the venipuncture.
- e. Holding the needle at approximately a 30-45 degree angle, pierce the skin with one quick motion.
 - (1) Lower the angle of the needle to approximately 10 to 15 degrees when the bevel is completely under the skin, and advance it into the vein.
 - (2) Tape the needle in place.
 - (3) Place sterile gauze over venipuncture site and note the time of phlebotomy for documentation.
- f. Release the clamp on needle line to allow blood to flow into the sample pouch. If there is no blood flowing, the vein may be palpated ABOVE the puncture site. DO NOT TOUCH THE NEEDLE SITE. Refer to step 7.
- g. Instruct the donor or patient to relax hand and give grip a slow, firm squeeze every 5-10 seconds to increase venous flow through muscular activity.
- h. Loosen cuff to no more than 50 mmHg during draw.
- i. Once sample pouch has 40-50 ml of blood collected, place 2 metal clamps on the tubing above the pouch and crimp closed. Break the cannula on the draw line so the blood will start flowing down the tubing toward the collection bag. Push the start button on the scale so the blood will collect into the bag. Unclamp the white clamp on the sample collection pouch so the sample tubes can be filled. Once filled, close the white clamp.
- j. Lift gauze periodically to check for signs of a hematoma or irritation while maintaining aseptic field.

6. Accidental Arterial Puncture

- a. An arterial puncture can be readily recognized: the color of the blood is bright red, the container fills very quickly, the tubing may pulsate, and the donor may complain of unusual or severe pain with needle entry.
- b. Donor care must be given immediately. Withdraw the needle immediately to prevent further trauma to the artery.
- c. The phlebotomist must remain with the donor and apply constant, firm, direct pressure to the puncture site for at least ten minutes. Do not obstruct the arterial pulse. Apply a cold pack to the affected area.

- d. Carefully check the puncture site after ten minutes. If the bleeding has stopped, apply a pressure dressing according to policy and procedure.
- e. Instruct the donor to care for the site in the following manner: Pressure dressing should remain on the site for a minimum of 4 hours. If the site begins to bleed again, instruct the donor to apply direct pressure to the site and raise the arm until the bleeding stops. Inform the donor bruising of the site may occur and that applying ice to the site intermittently may ease any discomfort and further bruising.
- f. Document the incident and the care given on the donor apheresis report or other appropriate document.
- g. Generate an Adverse Donor Reaction form to document the occurrence and to assure proper donor or patient follow-up.

7. Adjustment of the Needle

NOTE: If blood flow should slow, the following steps may help to re-establish adequate blood flow. All the steps listed may not be necessary.

- a. Have the donor firmly squeeze the grip.
- b. Check for proper placement and adequate pressure of the tourniquet or cuff.
- c. Palpate the vein above the venipuncture site.
- d. Pull the skin taut.
- e. Rotate the hub of the needle one-half turn in case the needle is resting against the wall of vein.
- f. Elevate needle hub with needle cap or folded gauze.
- g. Retract the needle slightly in case it may have gone through the vein.
- h. Insert the needle further into the vein in case it was not completely in the vein.
- i. Withdraw the needle if unable to obtain adequate blood flow, if the donor or patient complains of discomfort at the phlebotomy site, or if signs of a hematoma appear:
 - (1) Adverse Donor Reaction. Document care in the Eldorado draw information screen under Reactions or Therapeutic Apheresis procedure record.
 - (2) Follow Step (8) to perform a repeat venipuncture.
- j. Moderate or Severe vascular access-related reactions (hematoma) must have a Reaction Record generated to document the occurrence and to assure proper donor or patient follow-up.

8. Performing Repeat Venipunctures

- a. APHERESIS DONORS/DONATIONS:
 - (1) Obtain permission from the donor to perform a second venipuncture.
 - (2) If the venipuncture for the access line is unsuccessful, it is necessary to setup and prime a new kit prior to repeat venipuncture.
 - (3) For the COBE Spectra: Dual Needle
 - (a) Repeat venipunctures can be performed on the return line only and still maintain a 5 day product.
 - (b) If a return needle infiltrates and the procedure is discontinued, aseptically disconnect access line from needle and connect Return line to the access needle. Proceed with RINSE BACK of donor red cells.
 - (4) For the COBE Trima:
 - If the Trima infiltrates, the needle cannot be replaced, procedure has to be discontinued.

C. WHOLE BLOOD DONORS:

- (1) If venipuncture was unsuccessful, a second attempt may be made if:
 - (a) No more than 50 grams of blood was removed on the first attempt.
 - (b) The donor agrees to a second attempt.
 - (c) A second acceptable venipuncture site can be located. It is preferable not to use the same arm if a vessel was punctured.
- (2) A new donor bag/needle must be used. (The used bag must be appropriately discarded in the biohazard trash.)
- (3) A new ISBT number must be used.
- (4) Document both venipuncture attempts in the Eldorado donor draw steps.
 - (a) Include the total volume collected.
 - (b) Defer the donor appropriately based on the total volume collected:
Volumes >100 mL, defer for 8 weeks. Volumes < 100 mL defer for 48 hours.
- (5) Dispose of the empty bag in biohazard trash and dispose of the needle in approved sharps container.

D. THERAPEUTIC APHERESIS PROCEDURES/PATIENTS:

- (1) To ensure sterility of the product, a new collection kit must be used. Attempt to perform a repeat venipuncture following the appropriate steps of the SOP.
- (2) Document the second venipuncture and traceable supplies in the Eldorado donor draw steps.
- (3) If unable to re-establish venous access, it may be necessary for the patient to undergo placement of a central venous catheter for completion of the procedure.
 - (a) Contact the responsible physician to discuss.
 - (b) Aseptically disconnect needle from remaining tubing kit at Luer connector. Discard needle in appropriate biohazard container.
- (4) Resume and complete the procedure.

9. Venipuncture Site Monitoring

- (1) Monitor venipuncture site for signs of hematoma.
- (2) Discontinue the procedure at the first sign of infiltration or hematoma.
- (3) Apply firm pressure to the venipuncture site with gauze.
- (4) Elevating the arm may reduce bleeding time.
- (5) Apply a compression dressing.
- (6) An ice or cold pack may be applied for comfort.
- (7) Instruct the donor, patient, or caregiver of dressing care.

NOTE: Large hematomas that form above the vein entry site indicate penetration of posterior vein wall. Completing a procedure is improbable and may result in trauma and discomfort to the donor or patient and possibly a loss of blood.

- (8) Continue dialog to promote comfort and alleviate any fears of the donor or patient and continually evaluate their condition.
- (9) **DO NOT LEAVE DONOR OR PATIENT UNATTENDED.**

10. Discontinuation of Collection

- (1) Release the tourniquet or cuff and inform donor or patient that the needle is going to be removed.
- (2) Ensure that needle tubing is clamped to stop flow to or from the donor or patient.
- (3) Remove grip from hand.
- (4) Stabilize needle at hub and remove tape.
- (5) Gradually apply pressure over venipuncture site while removing needle quickly. Slide needle into needle protector.
- (6) Have the donor or patient press firmly on gauze with two fingers until bleeding has stopped, or do so for a patient if unable. The arm may be elevated to expedite clotting.
- (7) Deposit needle in biohazardous waste container. **DO NOT RECAP NEEDLE.**
- (8) Apply pressure dressing over sterile gauze.

11. Post Procedure Instructions

Refer to the specific collection policy regarding post procedure instruction.

12. Documentation

- a. For whole blood collections, record the following Eldorado Donor Doc history system, or Eldorado donor draw information tab:
 - (1) Record vein inspection.
 - (2) Record the start and end time of the collection.
 - (3) Record the arm used for the phlebotomy and phlebotomist initials.
 - (4) Indicate any relevant comments about the collection under “COMMENTS tab.”
 - (5) Document donor reactions and infiltrates in the Eldorado donor draw information .
- b. For donor apheresis procedures record the following on the Donor Apheresis Procedure Record:
 - (1) Record the time of venipuncture as the start time for the procedure.
 - (2) Document the arm used for draw and return.
 - (3) Document donor reactions and infiltrates on the procedure record.
- c. For Therapeutic procedures record the following on the Therapeutic Apheresis Procedure Record:
 - (1) Record the time of venipuncture as the start time for the procedure
 - (2) Document the arm used for draw and return.
 - (3) Document donor reactions and infiltrates on the procedure record.

IX. Interpretation of Results, Reference Values and Acceptance Criteria NA

X. Reporting of Results NA

XI. Limitations, Troubleshooting, or Comments NA

XII. References

- A. Technical Manual, Current Edition, AABB, Bethesda, MD
- B. Standards for Blood Bank and Transfusion Services, Current Edition, AABB, Bethesda, MD

- A. Food and Drug Administration, Code of Federal Regulations 21 Parts 210-211, 606
- B. American Association of Blood Banks, Technical Manual, Current Edition
- C. American Association of Blood Banks, Standards for Blood Banks & Transfusion Services, Current Edition.

- D. College of American Pathologists, So You're Going To Collect A Blood Specimen: An Introduction to Phlebotomy, Current Edition.
- E. American Association of Blood Banks, Blood Donor Phlebotomy Certificate Program, 45 Annual Meeting, November 1992.