



HEALTH HOLDING

HAFAER ALBATIN HEALTH  
CLUSTER  
MATERNITY AND  
CHILDREN HOSPITAL

<b>Department:</b>	Laboratory and Blood Bank		
<b>Document:</b>	Internal Policy and Procedure		
<b>Title:</b>	Phlebotomy, Collection, Labelling and Handling of Donor Blood Specimen and Post Phlebotomy Donor Care		
<b>Applies To:</b>	All Blood Bank Staff		
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## 1. PURPOSE:

- 1.1 Set the steps and responsibilities of blood collection from the donors.

## 2. DEFINITONS:

- 2.1 **Phlebotomy:** is the act of drawing or removing blood from the circulatory system through a cut (incision) or a puncture.

## 3. POLICY:

- 3.1 Ensure the comfort and satisfaction of the donor's thus encouraging re-attendance. Adopt the appropriate system for providing the necessary care for blood donors before, during, and after the procedure.
- 3.2 Proper collection technique should be maintained to minimize contamination of the donated unit and phlebotomy- related local complications.
  - 3.2.1 Minimize contamination of the donated unit. This is through the following:
    - 3.2.1.1 Donor blood will be collected using a closed sterile, pyrogen-free, properly identified FDA or CE approved container.
    - 3.2.1.2 Blood collection containers must have diversion pouch (the diversion results in decreased bacterial contamination of blood components by as much as 50%).
    - 3.2.1.3 Proper sterilization of venipuncture site.
  - 3.2.2 Minimize phlebotomy- related local complications such as hematoma or nerve injury.
  - 3.2.3 Mix blood and anticoagulant continuously throughout the procedure using a properly calibrated blood shaker.
- 3.3 Regular assessment of personnel competency on proper venipuncture site preparation.
- 3.4 Provision of Counselling during (and shortly after) blood donation and giving post donation instructions.
  - 3.4.1 Observation of the donor during the donation process for the early detection and management of donor adverse reaction.
  - 3.4.2 Providing emergency medical care as necessary and checking the necessary equipment and supplies.
  - 3.4.3 After the donation is completed, the donors' recovery will be observed and monitored.
  - 3.4.4 Giving written post donation instructions and refreshment.
- 3.5 Proper dealing with the confidential unit exclusion (CUE) and post donation information. Refer to "Confidential Self Unit Exclusion And Handling Post Donation Information" policy (LB-IPP-229).

## 4. PROCEDURE:

- 4.1 **Materials required:** See materials and equipment mentioned in 5.
- 4.2 **Blood bank nurse, phlebotomist, technician, or specialist of the donor room:**

in their quality control sheet. He/ She checks that the supplies and equipment needed for phlebotomy and donor's care are available.

**4.3 Bag selection:**

4.3.1 The collection set must be sterile, pyrogen-free and closed system with integrally attached diversion pouch.

4.3.2 Inspect bags for defects, leaks, kinks, discoloration, particulate contamination, or other defects. In case of defect, do not use. (Apply pressure to check for leaks)

4.3.3 Check the expiry date of the bag.

**4.4 Bag Labelling:**

4.4.1 Prior to phlebotomy, put the printed donation number from hematos system on the main collection bag and all transfer bags, on donor form and containers for laboratory tests.

**4.5 Donor Blood Specimens:**

4.5.1 Should be collected during the donation.

4.5.1.1 Specimens could be collected once the diversion pouch has been filled and the donor blood is allowed to flow into the collection bag.

4.5.2 Properly labelled and crosschecked with the collected product label. They shall be reidentified with the blood container immediately after filling.

4.5.3 At least one EDTA tube (3 ml) and two plain tubes (6 ml each).

4.5.4 Stored under appropriate and controlled conditions (refrigerator at temp. 2-8 °C).

**4.6 Preparing venipuncture site and Phlebotomy:**

4.6.1 The aim is to reduce the risk of bacterial contamination of the collected blood/blood component.

4.6.2 Personnel competency on proper venipuncture site preparation is assessed regularly.

4.6.3 Ask the donor about his/ her name and age to confirm data written on the donor form. Ensure that the labelling on blood container, processing tubes, and donor form is identical.

4.6.4 Make the donor lie down with a pillow under the head or recline in a comfortable donor chair. Loosen tight garments.

4.6.5 Place bag on the Electronic bag blood shaker tray and rout the tube through the machine clamp. Be sure the balance is adjusted for the amount of blood to be drawn.

4.6.6 Preparing venipuncture site:

4.6.6.1 Inspect arm for suitable vein. Select one arm for phlebotomy after inspecting both of the donor's arms. The arm is selected based on the presence of a prominent, large, firm vein to permit a single, readily accessible phlebotomy site that is devoid of scarring or skin lesions.

4.6.6.1.1 The median vein is centrally located in the antecubital fossa and is the first choice because it is well anchored. The second choice is the cephalic vein that lies laterally (shoulder side) and is often superficial. The third and final choice is the basilic vein, which lies on the inner side of the antecubital fossa.

4.6.6.2 Before wearing glove, apply tourniquet and identify the suitable venipuncture site.

4.6.6.3 Wear glove then release the tourniquet .

4.6.6.4 Scrub area at least 4 cm in all directions from intended site of venipuncture (i.e. 8 cm in diameter) with 2% PVP iodine solution for a minimum of 30 seconds. The arm need not be dry before the next step.

4.6.6.5 Apply 10 % PVP iodine swab stick, start at the center with concentric spiral outward for 30 seconds

4.6.6.6 Cover area with sterile gauze, and do not touch the skin. Do not repalpate the vein at the intended venipuncture site.

4.6.6.7 For donors sensitive to both iodine or in case of unavailability of iodine, a method using only isopropyl alcohol could be considered.

4.6.6.7.1 Scrub 4 cm area with alcohol swab in all directions (up-and-down) from intended site for 30 seconds and leave it to dry.

4.6.6.7.2 A second scrub is then applied starting at the centre with concentric spiral outwards.

- 4.6.6.8 Methods of disinfection of venipuncture site provide surgical cleanliness, but none of the methods can achieve an absolutely aseptic site.
- 4.6.6.9 In case of contamination of venipuncture site, repeat the entire procedure.
- 4.6.7 Phlebotomy and blood collection:
  - 4.6.7.1 Apply tourniquet again or blood pressure cuff approximately 2 inches above the antecubital area (the tubing should be directed away from antecubital area and the cuff should be inflated to 40-60 mmHg). Ask the donor to open and close his/her hand until previously selected vein is again prominent.
  - 4.6.7.2 Clamp the tubing near the needle before removing the needle cover to prevent air from entering the system.
  - 4.6.7.3 Uncover the sterile needle (16 -gauge needle), and do venipuncture immediately by inserting the needle with its bevel upward in straight steady motion in the vein.
  - 4.6.7.4 Once the bevel has penetrated the skin, palpation of the skin above the needle stem may be performed with a gloved finger, provided the needle is not touched. When the needle position is acceptable, tape the tubing to the donor's arm to hold the needle in place.
    - 4.6.7.4.1 If more than one skin puncture (i.e. double phlebotomy) is needed, another blood bag must be used. Use different site.
    - 4.6.7.4.2 Excessive probing with the needle should be avoided to prevent nerve injury.
  - 4.6.7.5 The clamp is released to allow the blood to flow to the pouch. The sample pouch should be positioned below the donor's arm. Observe the blood flow through tubing (fairly rapid and steady). Fill the pouch with 30 to 35 ml of blood.
  - 4.6.7.6 Once the pouch is filled, apply a clamp to the tubing between donor needle and the pouch. Break the in-line cannula in the tubing that leads from donor needle to the collection bag to allow the blood to flow into the collection bag.
  - 4.6.7.7 Switch on blood shaker. Mixing blood with anticoagulant may be done manually by gently lift-titling the bag every 45 seconds if the blood shaker is not available. Less agitation is necessary.
  - 4.6.7.8 Samples (on plain and EDTA tubes) could be collected at this stage
  - 4.6.7.9 Let donor open and close his fist slowly every 10-20 seconds during collection.
    - 4.6.7.9.1 Squeezing foam ball every 10-20 seconds could be used if available.
  - 4.6.7.10 Do not leave the donor unattended at any time during or immediately after the phlebotomy procedure.
  - 4.6.7.11 After collecting the specified amount (about 450 ml) of blood, the device will automatically stop the blood flow, and alarm will sound.
    - 4.6.7.11.1 Collection timing:
      - 4.6.7.11.1.1 Complete draw within 15 minutes to separate all blood components,
      - 4.6.7.11.1.2 If it exceeds 15 minutes we can separate only PRBCs and discard platelet rich plasma.
    - 4.6.7.11.2 Collection volume (For 450 ml collection bag):
      - 4.6.7.11.2.1 The volume of blood drawn should be proportional to the amount of anticoagulant/preservative solution in the collection container.
      - 4.6.7.11.2.2 One ml of blood weighs at least 1.053 g, indicated by the minimum allowable specific gravity for donors.
      - 4.6.7.11.2.3 Routine-Volume Collection: A unit containing between 405-495 ml of whole blood should weigh between 427-521 grams plus the weight of the container bag plus anti-coagulant.
      - 4.6.7.11.2.4 Overweight Collection (heavy units): with whole blood volumes of >495 ml (whole blood weight: >522 grams). The whole unit should be discarded.

- 4.6.7.11.2.5 Low-Volume Collection: with whole blood volumes of 300-404 ml (whole blood weight: 316-425 grams). Plasma and platelets should be discarded (due to higher citrate concentration).
- 4.6.7.11.2.6 Very Low-Volume Collection (Quantity Not Sufficient "QNS"): with whole blood volumes of <300 ml (whole blood weight: <316 grams). The whole unit should be discarded.
- 4.6.7.11.2.7 Some whole blood donations may be labelled "not for components (platelet concentrate, fresh frozen plasma, or both) because of prolonged draw time.
- 4.6.7.12 Clamp the bag's tube near its needle, release the tourniquet, withdraw the needle, retract it into its safety guard and apply pressure over the gauze or cotton piece, and ask the donor to raise his/her arm (elbow straight) and to hold the gauze/cotton piece firmly over the phlebotomy site with the other hand.
  - 4.6.7.12.1 The sliding sheath needle guard to prevent accidental needle-stick injuries. Those devices allow retraction of the needle into a safety guard at the completion of blood collection.
  - 4.6.7.12.2 Capping of needles should be avoided to prevent injuries.
- 4.6.7.13 Record time started and finished and unit volume on the donor form.
- 4.6.7.14 Carry the blood collection set and specimens immediately after donation to the processing room.
- 4.6.7.15 The blood bank technician in the component preparation room receive the blood units (with the time of donation, volume and any recommendation e.g. no platelet separation). Recheck numbers on the container, processing tubes, and donation form.
- 4.6.7.16 Seal the tube below the needle and discard needle assembly into the biohazard container.
- 4.6.7.17 Heat seal into at least 5 segments with clear readable numbers. The integral donor tubing segments shall be separable from the container without breaking the sterility of the container. Re-inspect the container for defects.
  - 4.6.7.17.1 The seal between each segment should be clean and allow for easy separation.
  - 4.6.7.17.2 A unique number is imprinted on each tube segment.
- 4.6.7.18 Remove the first segment and attach a sticker with unit identification number to it and place it in refrigerator for 60 days. This is for investigative purposes in case any transfusion reactions occur.
- 4.6.7.19 Keep the segments attached to all blood collection set for further component separation.
- 4.6.7.20 Place blood at appropriate temperature:
  - 4.6.7.20.1 Whole blood from which platelet concentrate will not be prepared should be placed at 1 to 6 °C after collection.
  - 4.6.7.20.2 If platelets are to be prepared, blood should not be chilled but should be stored in a temperature of 20 to 24 °C until platelets are separated.
- 4.6.7.21 Platelets must be separated within 8 hours after collection of the whole blood unit.
  - 4.6.7.21.1 Units from donors ingested aspirin within last three days, not suitable to prepare platelets.
- 4.6.7.22 Keep the sample tubes in blood bank sample refrigerator until sending to the central laboratory for TTD screening and doing the other required tests.

**4.7 Post-phlebotomy donor care (Donors are given proper written post donation instructions):**

- 4.7.1 The aim is to reduce the risk of adverse donor reactions and to advise the donor to provide the blood bank with any additional information that may affect the safety of the blood for transfusion.
- 4.7.2 Donor must not be left unattended at any time.

- 4.7.3 Check arm and apply bandage only after all bleeding stops.
- 4.7.4 Let donor remain on donor chair for 5 minutes under close observation by staff. Observe him for signs or symptoms of reactions.
- 4.7.5 Allow the donor to setup when his condition appears satisfactory.
- 4.7.6 Offer the donor juice to drink before leaving and observe him.
- 4.7.7 Donor must be asked not to leave until released by staff (at least 10 minutes and in absence of any adverse reaction).
- 4.7.8 In cases of donor adverse reaction, examines and manages the donor and record all the events in donor adverse reactions form as will be described later in "Management Of Donor Adverse Reactions" policy LB-IPP-230).
- 4.7.9 Ask donor not to smoke for at least 1 hour after phlebotomy.
- 4.7.10 Ask donor to drink more fluids than usual next 24 hours.
- 4.7.11 Ask donor to keep his bandage on for two hours.
- 4.7.12 Ask donor not to lift or carry heavy objects with the donating arm for the remainder of the day.
- 4.7.13 Ask donor to apply ice for about 15 minutes if bruising occurs.
- 4.7.14 Ask donor to apply direct pressure for 5-10 minutes to needle site and raise arm if bleeding occurs
- 4.7.15 Ask donor to sit down (with head lowered between knees) or lie down (with feet elevated.) if dizziness occurs until the feeling passes. If driving a car, pull over immediately and stop.
- 4.7.16 Donors who work in certain occupations (e.g. constructor workers, operators of machinery or persons working at heights) should be cautioned that dizziness or faintness might occur if they return to work immediately after giving blood.
- 4.7.17 Hazardous hobbies should not be followed on the day of donation, e.g. gliding, powered flying, car or motor cycle racing, climbing, diving, etc.
- 4.7.18 Tell donor that if he becomes ill in the next 72 hours (flu-like symptoms, fever, or increased pain or swelling at the needle site) or If he feels his blood should not be used for ANY REASON, contact blood bank staff with information on your illness.  
Give the donor the written "Post-donation instructions" Form .
- 4.7.19 Thank the donor and encourage repeat donation.
- 4.7.20 Donor satisfaction inquiry form could be used to assess and improve blood bank quality of donation service.

#### 4.8 **Documentation and result reporting:**

- 4.8.1 Record adverse reactions as will be described later in "Management Of Donor Adverse Reactions" chapter (LB-IPP-230).
- 4.8.2 In DHQ form, Record any exceptions like;
  - 4.8.2.1 Double phlebotomy.
  - 4.8.2.2 Incomplete bleed.
  - 4.8.2.3 Slow bleed (more than 15 minutes).
  - 4.8.2.4 Arterial puncture.
  - 4.8.2.5 Contamination.
  - 4.8.2.6 Overweight unit: >522 grams plus weight of set.
  - 4.8.2.7 Very low-volume units "QNS": < 316 gram plus weight of set.

### 5. **MATERIALS AND EQUIPMENT:**

- 5.1 Records and forms:
  - 5.1.1 Daily Blood Volume Regulators Cleaning and Calibration form
  - 5.1.2 Daily Tube sealer maintenance and quality form
  - 5.1.3 Donor History Questionnaire (DHQ) and consent Form
  - 5.1.4 Hematos system of blood bank.
  - 5.1.5 Donor Adverse Reactions Form and File.
  - 5.1.6 "Post-donation instructions" Form
  - 5.1.7 Donor satisfaction inquiry form and File.
  - 5.1.8 Daily check of emergency equipment and supplies Form

- 5.1.9 CRASH CART check form
- 5.2 Povidone- Iodine 2 % swab stick (as per availability).
- 5.3 Povidone- Iodine 10 % swab stick Povidone- Iodine 10 % swab stick (as per availability).
- 5.4 Alcohol swab (saturated with 70% isopropyl alcohol).
- 5.5 Sterile gauze.
- 5.6 Cotton piece.
- 5.7 Surgical tape/ plastic bandage.
- 5.8 Tourniquet.
- 5.9 Sterile, pyrogen-free and closed system collection set with integrally attached diversion pouch.
- 5.10 Blood shaker scale. It is associated with electronic monitor. It mixes continuously the blood with the anticoagulant showing the volume collected and checking the blood flow.
- 5.11 Tube sealer (Dielectric heat sealer) or clips.
- 5.12 Sterile vacuumed test tubes (for each donor at least 3 plain without anticoagulant (6 ml) and 1 with anticoagulant (4 ml).
- 5.13 Tube holder or rack.
- 5.14 Medicl emergency supplies box (e.g. crash cart).
- 5.15 Public services emergency numbers (997 "Ambulance", 998 "Fire", 999 "Emergency") and hospital emergency number (for code BLUE: 2222).

## 6. RESPONSIBILITIES:

- 6.1 Staff in charge of the donor area must have valid basic life support certification. He/She must follow the policy and procedure.
- 6.2 The phlebotomist is responsible for blood collection from the donor after verifying the donor screening details, checking the unit labels and preparing the phlebotomy site.
- 6.3 The phlebotomist must be trained in
  - 6.2.1 Proper collection technique to:
    - 6.2.1.1 Minimize contamination of the donated unit.
    - 6.2.1.2 Minimize phlebotomy- related local complications such as hematoma or nerve injury.
  - 6.2.2 Provision of Counselling during (and shortly after) blood donation which include:
    - 6.2.2.1 Observation of the donor during the donation process for the early detection and management of donor adverse reaction.
    - 6.2.2.2 Providing emergency medical care as necessary and checking the necessary equipment and supplies.
    - 6.2.2.3 After the donation is completed, the donors' recovery will be observed and monitored.
    - 6.2.2.4 Giving written post donation instructions and refreshment.
  - 6.2.3 Dealing with the confidential unit exclusion (CUE) and post donation information.
- 6.4 Regular assessment of phlebotomist competency on proper venipuncture site preparation is the responsibility of blood bank physician.
- 6.5 Blood bank supervisor is responsible for availability of supplies and equipment needed for donors.


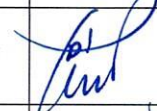



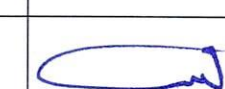
## 7. APPENDICES:

- 7.1 Donor Adverse Reactions Form

## 8. REFERENCES:

- 8.1 The Unified Practical Procedure Manual For Blood Banks In The Arab Countries, 1434-2013.
- 8.2 The Standard Policy For Blood Banks In The Kingdom Of Saudi Arabia, 1<sup>st</sup> edition, 1435-2014.
- 8.3 National Standards For Clinical laboratories and Blood Banks, 1<sup>st</sup> edition, 2015.
- 8.4 AABB Technical manual, 18th edition, 2014.
- 8.5 AABB Standards for Blood Banks and Transfusion Services, 30<sup>th</sup> edition, 2016.
- 8.6 Good Manufacturing Practice for Blood Establishments, Version 2.0, May 2019, Saudi FDA.

9. APPROVALS:

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<b>Reviewed by:</b>	Dr. Tamer Mohamed Naguib	Medical Director		August 13, 2024
<b>Approved by:</b>	Mr. Fahad Hazam Alshammari	Hospital Director		August 20, 2024

Appendix 7.1

Kingdom of Saudi Arabia  
Hafar Al Batin Health Cluster  
Maternity and Children Hospital



المملكة العربية السعودية  
التجمع الصحي بحفر الباطن  
مستشفى الولادة والأطفال

**DONOR ADVERSE REACTION PREVENTION AND TREATMENT**

NAME	ID NUMBER/ IQAMA NUMBER	UNIT NUMBER

**LOCATION:**

- History Area       Refreshment Area       Donor Area       Other: .....

**MILD REACTION:**

- Pale       Perspiration       Fast Breathing       Nausea       Vomiting  
 Cold       Dizziness       Light Headedness       Other: .....

**MODERATE REACTION**

- Slow Heart Rate (Pulse)       Low Blood Pressure (Less than 60 systolic)  
 Dizziness       Time for Recovery: ..... minutes

**SERIOUS REACTION**

- Stiff arms and legs       Shaking of arms and legs       Unconscious for how long? ..... seconds  
 Color change from pale to dark blue around lips       Incontinence       Urine       Stool  
 Convulsions: ( Mild: Short time unconscious, shaking of arms and legs; Severe: Body stiff, noisy breathing, arms and legs involuntary movement)

**TREATMENT**

- Reassure Donor       Cold Towel to forehead       Elevate Feet       Maintain Clear Airway  
 Uncross Legs       Loosen Light Clothing       Protect from injury       Calcium Gluconate  
 Give Fluids after recovery: Water/ Juice       Donation Discontinued

**INJURIES**

- None       Fall       Bruising       Hit Head       Arm bent with needle       Other: .....

**FOLLOW UP**

- Time Started: ..... Time Ended: ..... Recovery Time: .....  
 Evaluated before leaving       Sent to Emergency Room       follow up: Call mobile # .....

**CONTRIBUTING FACTORS**

- First time donation       Last meal >3hours       Weight <120lb (54.5kg)  
 Anxiety       Long waiting lines (>30minutes)       Needle manipulation/ double stick  
 >5 years since donation       <20 years old       History of previous reaction  
 Emotional stress       Noisy crowded site       Other: .....

**DONOR AREA**

- Hot       Cold       Humid       None of the above

	NAME	SIGNATURE	DATE
Blood Bank Senior:			
Blood Bank Physician :			

**ACTION PLAN**

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