**Model SOP**

**Standard Operating Procedure**

**Name of the facility / activity : Collection of Whole Blood**

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| **SOP no.**  | **Effective Date** | **Pages** | **Prepared by**  | **Authorised by**  |
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| **LOCATION** : Blood Donation Room |
| **SUBJECT** : Blood Collection |
| **Function** : Collection of a whole Blood Unit safely from a blood donor |
| **DISTRIBUTION**: Medical Officer, Phlebotomist (Staff nurse and Lab Technician)  Master file |

1. **SCOPE & APPLICATION:**

This describes a procedure for blood collection from the donor, using an aseptic method. Blood is collected in a sterile closed system bag with a single venepuncture. A correct performance of venepuncture is essential for the quality and safety of the blood donation. Successful venepuncture results not only in safe collection of a full unit of blood suitable for separation of components with good quality yields, but also contributes to the comfort and satisfaction of the donors thus encouraging re-attendance.

1. **RESPONSIBILITY:**

The phlebotomist or doctor is responsible for blood collection from the donor after verifying the donor screening details, checking the unit number labels and preparing the phlebotomy site.

1. **Materials Required**
2. Donor beds or couches with drapes and pillows.
3. Blood unit weighing and shaking device.
4. Blood collections bag.
5. Pilot tubes -one with CPD A and two plain.
6. Sphygmomanometer.
7. Tube strippers.
8. Sealing clips and crimper pliers.
9. Scissors.
10. Artery Clamps.
11. Pens.
12. Donor reg. No. stickers with 3 stickers for pilot tubes, one for donor card, one for blood bag and one replacement slips to be given to donor.
13. Cotton swabs soaked in spirit/Betadine (if donors having spirit allergy)
14. Hand grippers.
15. Adhesive tape.
16. 2 x 2 inch gauze pads.
17. Band-Aids.
18. Waste bins.
19. Reaction treatment supplies.
20. **Procedures:**
* After selection donor comes with the card to the blood collection room. A blood donor arrives in the donor room beleaguered by varying degrees of apprehension, distress and unfamiliarity.
* In most cases the donor's enthusiasm and altruism will counteract many
initial negative thoughts and feelings. The phlebotomies should be alert for sign of
distress and give psychological support to the donor so that blood collection is positive experience for the patient.

**Identification and examination**

1. Cordially greet and assist donor onto donor couch . Donors and visitors should not be allowed to stand in this area watching phlebotomy may precipitate reactions in the observers.
2. Take possession of donor records and blood bag, keep both in close proximity to
avoid confusion between the donors.
3. Ask the donor to state the name and compare with the donor record . Compare with the name recorded on Donor Record.
4. Examine both arms for scars, punctures or other evidence of drug abuse, skin
diseases and suitability for venipuncture.
5. Select the couch appropriate for the arm selected for venipuncture.
6. Position donor to ensure comfort and to allow for convenient space to work.
7. Use pillow protectors
8. Place absorbent towel under the elbow.
9. Request donor to loosen the collar or tie.
10. Ensure that donor is not chewing gum.
11. Review health history and examination on Donor Record for accuracy, completeness and legibility.
12. Signature of donor matches registered name.
13. All medical criteria is met and recorded.
14. Interviewer has signed the donor record.
15. Deferral instituted as required.
16. Affix blood identification no. on donor card, pilot tubes, blood bag. Write donor name and date of collection on the primary bag. On satellite bag write blood identification no. and date of collection.
17. Place the bag on the automatic weigher and shaker (Biomixer)with tubing threaded through the clamp.

***Selection of vein for phlebotomy***

1. Apply blood pressure cuff with tubing directed upwards at least two inches above the anticubital area and inflate to 40-60 mm of Hg to obstruct the venous return.
2. Position donor arm in naturally extended position on absorbent towel 20-30 degree angle from the body.
3. Ask the donor to squeeze the hand gripper firmly.
4. Palpate the anticubital area with pads of middle three fingers and identify the vein from other structures and define its course.
5. Select a vein that is central deep, turgid and well supported.
6. Select the skin entry site which is a few inches below the intended point of vein
entry.
7. Release the cuff pressure.

***Preparation of skin for phlebotomy***

1. Scrub entire anticubital area with spirit swab .
2. With the second spirit swab start at the point of entry and apply solution in
enlarging concentric pattern at least 3 inches in diameter. Allow to dry before
venipuncture. Cover the area by 2" x 2" sterile dressing if venipuncture is delayed.

***Venipuncture***

The blood must be collected in a sterile, closed system by a single venipuncture. The tubing must be clamped before venipuncture .

1. Distend vein by re inflating blood pressure cuff to 40-60 mm of Hg. To make the
selected vein prominent. Ask the donor to alternately squeeze and relax hand on
handgripper finally holding it tightly.
2. Twist off needle cover and inspect needle for needle barbs or other defects. Keep needle out of view of donor.
3. Pull skin taut below the venipuncture site with thumb / fingers of free hand.
4. With level upwards hold needle at needle hub at a 30-45 degree angle pierce skin with a smooth quick thrust at a selected point of entry.
5. When completely under the skin lower the angle of needle to 10 degrees or less and with a steady push, advance the needle to penetrate vein wall. A sudden cessation of tissue resistance indicates vein entry. Trade needle approximately 1/2 inche inside lumen of vessels to maintain secure position.
6. Release clamp from tubing and observe blood flow through tubing and time it entered the bag.
7. Secure needle to the donor arm with tape across the hub and additional tape may be placed on the tubing lower down on the arm.
8. Lower pressure of BP cuff to 30-40 mm Hg to facilitate blood flow and promote donor comfort.
9. Ask the donor to squeeze and relax the handgripper alternately.

***Monitor filling of blood container***

Remember that a filled unit must not be obtained at the expense of donor comfort and
safety.

1. Though the automatic shaker used will be constantly keep blood mixing the blood with anticoagulant and give the alarm if flow has stopped or predetermined amount of blood has been collected, the donor room personnel should be vigilant to observe any hematoma formation, kinks in the tubing, needle position or onset of donor reaction.
2. Interact with donor to prevent donor reaction.
3. Collection of one unit of blood usually takes 5-7 minutes. Give special care to slow collections i.e. Units not half full within 3-4 minutes.
4. Check tubing patency and pathway for kinks and obstructions.
5. Assess donor for pain (venospasm) or change in position of arm.
6. Look for positional effect. By only removing the tape or slightly elevating or tuming the needle, the level may be moved away from the vein wall or valve. Slightly withdrawl or advancing of needle may also prove beneficial.
7. Observe donor's squeezing technique. Tenseness in the shoulder or tight squeezing without any relaxation period to fill the vein between the squeezes can be counterproductive.
8. Strip the tubing to observe if the blood flow has been resumed.

4 Allow collection to continue uninterrupted until pre determined quantity of blood has been collected with the following exceptions:

1. Hematoma formation during or after venipuncture.
2. Donor reaction.
3. Excessive collection time should not be more than 15 min. because clot formation is inevitable in units with excessive collection time.

5 A second venipuncture may be performed if:

1. 50 ml or less blood has been already collected.
2. An acceptable vein is available on the opposite arm.
3. Donor requests a second venipuncture.

**Discontinue blood collection**

When the predetermined amount of blood has been collected the automatic blood
weigher and shaker gives the alarm and clamps the tubing.

1. Seal the tubing using radiofrequency tube sealer and use stripper to clear off tubing.
2. Apply hemostat proximal to seal using an artery forceps
3. Cut the tubing between the seal and hemostat.
4. Collect blood-sample from donor in two pilot tubes by releasing the hemostat and reapply it.
5. Release the BP cuff and remove it.
6. Remove the needle anchoring tapes, keep the 2" x 2" gauze dressing held lightly over the venipuncture site.
7. Remove the needle quickly and smoothly. Ask the donor to fold the arm at elbow.
8. Transfer the blood in the tubing to the third pilot tube by removing the hemostat.
9. Use needle destroyer to destroy the tip of the needle .
10. Discard the needle into the waste bin without replacing its cap.
11. Complete records.
12. Arms (s) used.
13. Successful or unsuccessful procedure.
14. Donor reactions *S/S* and management given.
15. Length of donation.

**Post Donation Care**

1. After few minutes ask the donor to straighten the arm and inspect for clotting. If
there is no ooze discard the dressing area kept on venipuncture site. If donor is
allergic to band-aid then apply betadine dressing with tape.
2. Instruct donors to :
3. Leave dressing in place for at least 4 hours and to keep it dry.
4. Avoid lifting or heavy exercise for 24 hours to prevent bruising and bleeding.
5. Increase fluid intake for at least 48 hours.
6. To avoid tobacco chewing ,smoking and driving for an hour after donation.
7. To rest and receive refreshment in refreshment area for about 10 minutes.
8. Thank donor for valuable contribution and give replacement slip if replacement
donor.
9. Direct the donor to the refreshment room and observe the donor while he/ she takes rest for 10- 15 minutes before departing.

**5. DOCUMENTATION:**

* 1. Make entries in the donor register/ computer.
	2. Make an entry of the failed venepuncture, as double prick.

**6. References**:

1. Technical Manual, 11th ed., American Associating of Blood Banks, 1993.
2. Technical Manual, 15th ed., American Associating of Blood Banks, 2005.
3. Donor room policies and procedures ........... AABB publication.
4. **END OF DOCUMENT**