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Standard Operating Procedure for Whole Blood Collection

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Principle:

The collection of whole blood is the key, first step that enables us to produce a variety of life-saving components, such as red blood cells, fresh frozen plasma, and platelet concentrates. This collection process can proceed only after the donor has been proven eligible to donate, based upon the comprehensive questions, mini-physical, and hemoglobin determination previously done as part of the *Donor Medical Review* process.

Materials:

1. Scrub solution—0.7% aqueous solution of iodophor compound (e.g., pre-packaged, single-use PVP-iodine or polymer-iodine complex)
2. “Prep” solution—Pre-packaged, single-use, 10% PVP-iodine
3. Sterile, labeled blood collection bag containing anticoagulant, with integrally attached tubing and needle (see *Nursing Labeling SOP* for further details)
4. Metal clips and hand sealers
5. Balance system to monitor volume of blood drawn
6. Sterile gauze and clean scissors, hemostats, and forceps
7. One (1) red-top and one (1) lavender-top test tube (7 mL each)
8. Blood tubing stripping device
9. Dielectric sealer
10. *Donor Medical Review* form
11. *Post-Phlebotomy Care SOP*

Procedure:

1. Apply blood pressure cuff or tourniquet to arm, immediately above the antecubital fossa. Ask donor to open and close hand several times in order to make the vein more prominent
2. Identify venipuncture site visually and/or by gentle palpation (see Note 1, below)
3. Release cuff/tourniquet
4. Using 0.7% aqueous solution of iodophor compound, scrub—for 30 seconds—at least 4 cm in all directions from the intended site of venipuncture (i.e., for an 8 cm diameter)
5. Starting at the intended venipuncture site and moving outward in a concentric spiral, apply “prep” solution; let stand for 30 seconds
6. Cover the area with dry, sterile gauze until the time of venipuncture (*after the skin has been prepared, it must not be touched again*)

7. Inspect bag for any defects and discoloration (the volume and color should normal, and there should be no evidence of particulate contaminants). Apply pressure to check for leaks
8. Position bag below level of donor's arm
9. Adjust the balance for the amount of blood to be drawn (429-525 grams, plus combined weight of bag and anticoagulant)
10. Make a very loose, overhand knot in tubing
11. Apply a hemostat to tubing before needle is uncapped to prevent air from entering line
12. Reapply tourniquet or inflate blood pressure cuff. Have donor open and close hand until previously selected vein is again prominent
13. Uncover sterile needle and do venipuncture immediately; tape tubing to the donor's arm to hold needle in place; and cover site with sterile gauze
14. Open the hemostat in order to allow blood to flow freely
15. Have donor open and close hand every 10-12 seconds during collection
16. Keep the donor under observation throughout the donation process—The donor never should be left unattended during or immediately after the donation
17. Make certain that the automatic mixer/balance is working properly, and be sure that blood flow is relatively brisk (collection should be complete within 15 minutes)
18. When appropriate amount of blood has been collected, the balance/mixer should interrupt blood flow (nevertheless, carefully monitor the collection to be certain that donor is not overdrawn)
19. When blood draw is complete, clamp tubing near venipuncture site using a hemostat, metal clip, or other temporary clamp. Release blood pressure cuff pressure to 20 mm Hg and fill tubes for blood processing as follows:

[--Ask Ann to fill in the details here--]

20. Deflate cuff; remove tourniquet; and remove needle from arm
21. Apply pressure over gauze and, with one hand, help donor raise arm straight up, holding gauze firmly over phlebotomy site with other hand
22. Discard needle assembly into biohazard container designed to prevent accidental needlesticks
23. For instructions on tending to the donor, refer to the *Post-Phlebotomy Care SOP*
24. Strip donor tubing as completely as possible into bag, as follows:
 - a. Start at seal
 - b. Work quickly to prevent blood from clotting in tubing
 - c. Invert bag several times to mix thoroughly
 - d. Allow tubing to refill with anticoagulated blood from the bag
 - e. Repeat this procedure a second time
25. Using the dielectric sealer, seal tubing attached to collection bag into segments, leaving each segment number clearly and completely readable
26. Attach a unit identification number to one segment to be stored as a retention segment
27. Reinspect bag for defects

28. Recheck numbers on container, processing tubes, donation record, and retention segment—Make certain they all match
29. Place blood into storage container at appropriate temperature, as follows:
 - a. If platelet are to be made, store bag at a temperature that will ensure that blood reaches 20-24° C
 - b. If the manufacture of platelets is not required, chill unit to 1-6° C immediately after collection
30. Record the following on the *Donor Medical Review* form:
 - a. Blood bag type
 - b. Blood bag supplier
 - c. Blood bag lot
 - d. Whether or not arm prep was done
 - e. Time at start of venipuncture
 - f. Time at stop of venipuncture
 - g. Gross weight of unit
 - h. Initials of person doing venipuncture

Notes:

1. If the vein is difficult to locate, a fingernail indentation or (rarely) a single-use, sterile, disposable surgical marker may be used to mark the venipuncture site.
2. For donors sensitive to iodine, an alternate method (e.g., “tincture of green soap”) may be used for arm scrubbing/preparation.

Reference:

AABB Technical Manual, 12th ed., pp 80-82; 688-691