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Weighing Blood Products - Troy Blood Bank

Document Type: Procedure

I. PURPOSE AND OBJECTIVE:

This document will provide Blood Bank staff with the procedure to determine, with precision and accuracy, the weight of blood products.

II. POLICIES:

A. For the purposes of this document 1 gm is equivalent to 1 mL of blood product.

B. Each RBC (with the exception of apheresis) units is given a default weight when brought in to the computer system. All other blood components (Fresh Frozen Plasma [FFP], cryoprecipitate, platelets) have their individual weights listed on the face label and are captured in the computer system when being processed.

C. Occasionally the nurse will request the weight of an RBC unit to be given. The digital scale is used for this purpose.

D. The standard unit of RBCs including autologous RBCs is collected in 600 ml bags.

E. Below are the pre-determined empty bag weights for each size of transfer bags available for use in the Blood Bank.

1. 150 ml transfer bag = 15 g
2. 300 ml transfer bag= 25 g
3. 600 ml transfer bag= 30 g

III. SCOPE:

The digital scale is used whenever the estimated volume for a Red blood Cell (RBC) unit is not precise

enough as determined by nursing or when indicated by specific blood bank procedure.

IV. EQUIPMENT AND SUPPLIES:

A. Ohaus Digital Scale – located in the cabinets by the procedure manuals near the segment sealing device.

B. Standard 200 gram and 2000 gram weights.

C. AC Adapter or 3 AA batteries.

D. Sterile Neonatal/Pediatric Syringe Set, contains:150ul filter and 30cc or 60cc BD™ syringe.

E. Fenwal™ Transfer Pack Container 300mL or 600mL- with coupler and a sterile fluid path.

F. Blood product to be weighed and/or neonatal unit with satellite bags attached.

V. DEFINITIONS:

A. FFP: Thawed Fresh Frozen Plasma

B. ISBT: International Society of Blood Transfusion

VI. QUALITY CONTROL:

A. Weigh the standard 200 g weight on the scale and record the weight on the *Daily Temperature and Quality Control Record*. Document the *Daily Temperature and Quality Control Record*, with a "√" to indicate that scale is operating within the expected results.

B. If any part of the expected value/quality control is unacceptable, then proceed as follows:

1. Do not use the scale.
2. Tag the scale with the green *Out of Order / Service Called* form.
3. Submit an internal variance and document the internal variance number on the form, *Dividing Products and Preparing Syringes*.
4. Document the form, *Blood Bank Reagent or Equipment Problems Log*.
5. Notify the Blood Bank Supervisor or the Lead Medical Technologist for follow up.

VII. PROCEDURE:

A. Equipment Calibration

Calibration is done annually, after repair, or if the 200g weight on day of use is not acceptable. This calibration uses a 2000g (total) weight.

1. Press and hold the Unit Cal button to start the calibration process, the display will show CAL.
2. Press the On / Off Zero button to capture 0. The display shows -C- while the scale stores the zero load signal.
3. The display will show C 2000 where 2000 is the calibration weight in grams.
4. Place the appropriate calibration weight on the platform.

5. Press the On / Off Zero button.
6. The display shows -C- while the scale stores the calibration point signal.
7. After the calibration, the display returns to the normal weighing mode.
8. The message CAL E will appear if the calibration steps are not followed or the wrong weight is used.
9. Record and initial the date the calibration was done.

B. Undivided RBC Components

Each RBC (with exception of apheresis units) is given a default weight when brought into the computer system. When the nursing unit specifically requests the actual weight of the unit be given:

1. Turn on the digital scale or verify the zero setting by using the reset button.
2. Place the RBC component needing to be weighed on a scale, ensuring that the attached segments are not included in the final weight.
3. Subtract 30 grams from the reading to allow for the weight of the empty bag.
4. Record the weight of the product on the *Record of Transfusion* form in grams.

C. Component Aliquots

1. RBC units to be used as parent units for aliquots or divided products must be weighed before any modification is done to them.
    a. If the unit is already brought into the computer, then the unit must be weighed, and its weight must be modified in the computer. *Example: a unit which needs to be divided for an adult who has severe congestive heart disease and has orders to give one unit over more than 4 hours.*
    b. If the unit specifically meets the needs for an infant, i.e. quad pack, the weight may be taken before the unit is brought into the computer inventory and modified at that time.
    c. Obtain the volume of the aliquot(s) by weighing the transfer bag in which the component was aliquoted and subtracting the pre-determine weight of the transfer bag.
    d. The volume for the aliquot(s) will have its weigh recorded by the medical technologist during computer modification. The computer automatically updates the volume of the parent bag. This value should be confirmed with actual weight and modified if necessary. Refer to Transfusion Medicine policy, Aliquot Preparation for more information.
2. All other blood components (FFP, cryoprecipitate, platelets) have their individual weights listed on the face label and are captured in the computer system.
3. Obtain the volume of the aliquot by weighing the transfer bag in which the component was aliquoted and subtracting the pre-determine weight of the transfer bag.
4. Perform the product modification in the computer using the Blood Bank CDM - *Dividing Blood*

Products. Record in the computer and record the volume for the prepared aliquot. After entering the volume of the prepared aliquot in the computer the computer automatically updates the volume of the parent bag and allows for the print of new product labels.

5. Product label with the new volume for the parent bag should be printed after modification or the parent bag's "new" volume for the parent bag should be recorded on the face label if automated ISBT label is not available. Refer to Transfusion Medicine policy, Aliquot Preparation and Blood Bank CDM - *Dividing Blood Products* for more information.

VIII. CALCULATIONS:

A. **Tare Function:** Values can progressively be added to a sample. By pressing the On/Off Zero button, the scale display returns to zero. After adding additional mass, press the On/Off Zero button to zero the scale again. Additional mass may be added up to the capacity of the scale.

B. **Negative Value:** When a load is removed from the scale, any zeroed value will be displayed as a negative number. To return to normal operation, the zeroed value can be cancelled by pressing the On/Off Zero button.

IX. NOTES:

A. **To Power Up:** When the scale is turned on, all display segments will be displayed for a few seconds, indicating the unit is self-adjusting to zero. Once the "0" is displayed, the scale is ready for use.

B. **Stable Reading Indication:** A star indicator will appear in the lower left corner of the display when a stable reading has been reached.

C. **Overload:** If the applied load exceeds the capacity of the scale, an "E" will appear on the display and the load should be removed immediately. The scale will return to normal operation.

D. **Low Battery Indication:** The display will show "Lo" when the batteries are weak and have to be replaced.

E. **Auto-Shut Off:** To extend the battery life, the scale will automatically turn off after about 4 minutes if no active weighing is occurring. The feature is only active with the battery.

X. REFERENCES:

1. AABB *Standards for Blood Banks and Transfusion Medicine*, current edition.
2. AABB *Technical Manual*, current edition.
3. College of American Pathologist, *Transfusion Medicine Checklist*, current edition.
4. Ohaus® Corporation, *Compact Series Instruction Manual*, 2016.

Attachments

Blood Product Division Aliquot Preparation Log.pdf

Out of Service Notice.pdf

Reagent Equipment Problems Log.pdf

Approval Signatures

Step Description	Approver	Date
	Vaishali Pansare: Chief, Pathology	4/19/2023
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Policy and Forms Steering Committe (if needed)	Gail Juleff: Project Mgr Policy	4/11/2023
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