TRAINING UPDATE

Lab Location:	SGAH	**Date Implemented:**	5.16.2013
Department:	Blood Bank	**Due Date:**	5.20.2013

DESCRIPTION OF PROCEDURE REVISION

Name of procedure:
Red Blood Cell Aliquot Preparation
Description of change(s):
• Updated SOP to include ISBT-128 instructions. • Added summary of process above procedure in SOP. • Blood component prep code for all aliquoted products will be "A" plus the E code. For example, if you aliquot product E0226, your BCP code will be AE0226. • We must print new blood product labels for aliquotted products using the HemaTrax system (training in progress). • Sunquest v6.3 CANNOT recognize the division letter for an aliquotted ISBT-128 product, so we will print the slash number label from Sunquest and apply it to the ISBT label for all aliquotted products. • If your red cells are BOTH CMV-negative and Hgb S-negative, you cannot print both on the ISBT label. You must add a comment sticker with these attributes. • **Note: If you aliquot an apheresis red cell product, you will have to calculate the volume of anticoagulant in the aliquot. Always try to only use red cells from whole blood for aliquot.**

Non-Technical SOP

Title	**Red Blood Cell Aliquot Preparation**
Prepared by	Stephanie Codina Date: 3/27/2011
Owner	Stephanie Codina Date: 3/27/2011

Laboratory Approval

Print Name and Title	Signature	Date
Refer to the electronic signature page for approval and approval dates.		

Local Issue Date: Local Effective Date:

Review:

Print Name	Signature	Date

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1. PURPOSE

To describe the procedure for making small-volume red blood cell aliquots. This procedure allows small amounts of a red blood cell unit to be transfused over the lifespan of the original blood product. This process limits donor exposures and decreases donor-related risks in the recipient while minimizing overall blood wastage.

2. SCOPE

This procedure applies to red blood cell transfusion requested for a neonate or small child. This procedure also applies to requests to "split" units for adults. SGAH staff members perform all RBC aliquot procedures for WAH and SGAH.

3. RESPONSIBILITY

All blood bank staff members must be trained and competent in RBC aliquot preparation to ensure the purity, potency, and safety of the aliquotted red blood cell product.

4. DEFINITIONS

N/A

5. PROCEDURE

Summary of steps that will be performed for this procedure:

A. Physically prepare the aliquot unit.
B. BCP the aliquot in the LIS to generate a slash unit.
C. Generate a HemaTrax label for the new product using the aliquot division letter.
D. Irradiate the aliquot.
E. Label the unit with both the HemaTrax label and the slash unit number (only the slash number will correspond to the Sunquest system).
F. Allocate/Crossmatch/Issue the unit using the slash unit number.

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Step	Action
1	Obtain the supplies necessary to aliquot a red cell: A. An aliquot container a. For aliquots <25 mL, use the 03-960-00 set containing a 150 micron filter and 30cc syringe. b. For aliquots <55mL, use the 03-960-10 set containing a 150 micron filter and 60cc syringe. c. For aliquots >55mL, use a transfer pack **or** two syringes. B. Sterile welding device C. Heat sealer D. Scale E. Hemostats F. Labels
2	Select a red blood cell that meets the recipient's transfusion specifications and allocate to the patient in the LIS. A. Red cells are <u>not</u> routinely crossmatched for infants <4 months of age. B. When the mother of an infant has clinically-significant antibodies (including passive anti-D): a. Antigen-negative units are required. Refer to procedure, "Antigen Typing." b. Both IS and AHG crossmatch are performed. Refer to procedure, "Crossmatch." C. Perform both an IS and AHG crossmatch if mom's history is unknown **and** the baby's antibody screen is positive.\ D. Refer to procedure, "Neonatal Type and Screen and Crossmatch" for additional instruction. For neonatal transfusions, the following transfusion requirements should be met: A. Group O red cells, Rh-negative are preferred, but Rh-positive may be used for Rh-positive recipients B. CPDA-1 anticoagulant C. Leukocyte reduced D. CMV-seronegative E. Hemoglobin S negative F. Irradiated after aliquot to reduce potassium leakage
3	Tighten all connections. The hub connection nearest the syringe has disconnected on rare occasions. **Use aseptic technique for this procedure!**

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Step	Action
4	Document the following on the "Product Modification Log" A. Tech identification B. Date of modification C. Unit number of original unit D. Product or E code of original unit E. Lot number of bag or syringe and expiration date of syringe F. Wafer lot number
5	Gently mix the primary bag to resuspend the red cells.
6	Connect the filter-syringe set to the primary red cell per procedure, "Sterile Tubing Welder."
7	Slowly draw the required amount of blood into the syringe or allow the required amount of blood to flow into the transfer bag via gravity. Include an extra 5 mL of red cells to compensate for the volume that will be lost in the tubing.
8	Clamp the line when an appropriate amount of blood has been transferred. Seal the line using a tube sealer at least twice. A. Always ensure the hemostat is clamped between the parent unit and the location in which the tubing will be sealed. B. This will protect the sterility of the unit should the heat seal fail.
9	For syringe transfer only: Clamp the line between the syringe and filter. Heat seal the tubing between the hemostat/clamp and the filter at least twice.
10	If the original product is an apheresis red cell, calculate the amount of anticoagulant in the aliquotted red cell product product. Each mL of blood contains approximately 0.14 mL of anticoagulant.
11	Prepare a label for the red cell aliquot. A. For ISBT-128 labeled products a. Print a label using the HemaTrax system per procedure, "ISBT-128 Label Production." b. Include the division letter on the label. c. Add a pre-printed comment label indicating the unit is CMV and hemoglobin S negative.

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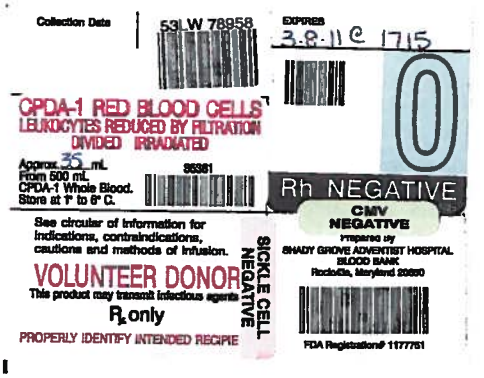
Step	Action
11 Cont	B. For Codabar-labeled products, the label MUST contain the following: a. Place a unit number from the parent unit or handwrite the unit number on the label b. Expiration date (24 hours from the beginning of this procedure) c. Product Code Barcode Label d. Blood Type (ABO/Rh) e. FDA Registration (Prepared by SGAH Blood Bank) f. CMV-Negative (if applicable) g. Sickle-Negative (if applicable) Apply the label to the aliquot **prior to disconnecting it from the parent unit.** 
12	Document the following on the "Blood Product Modification Log." A. Unit number of new product B. Product or E code of new product C. Documentation of the weld inspection
13	Create the aliquot in the LIS system per appendix A. A. A new unit number label will print following LIS modification. B. Apply the unit number to the new product label **for codabar and ISBT-128 labeled units.** 
14	Disconnect the aliquot from the parent unit and discard the filter.

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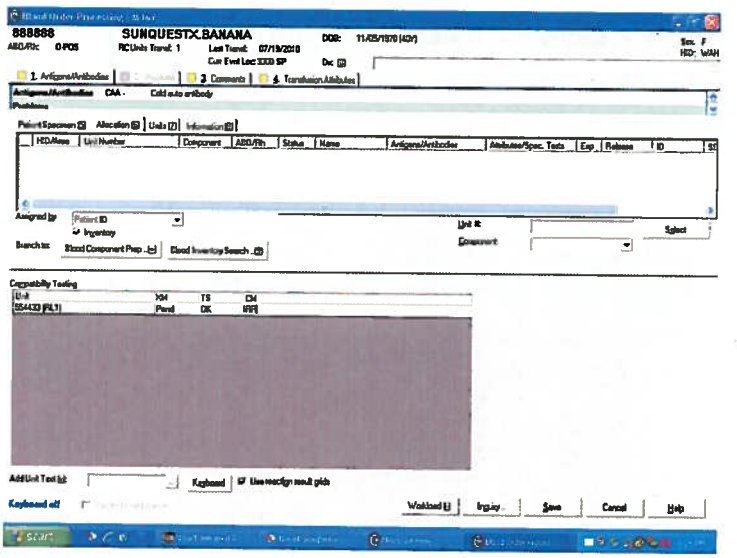
Step	Action
15	Irradiate the aliquot per procedure, "Blood Component Irradiation." For a codabar unit ONLY, enter the irradiation comment on the unit tag: A. Access the T&S or TRRC specimen in Sunquest function "Blood Order Processing." B. Click on the "Allocation" folder. C. In the "Add Unit Test" field, type either "." or ";CM" to add a comment field. D. The "CM" field will appear. Type ";IRR" to add the irradiation comment. E. Click the "Save" button. 
16	Have a second tech verify the labeling of the blood product and document the 2nd label check on the "Product Modification Log" form. The following will be verified. Do not issue the product if discrepancies exist. A. Unit number of DIN B. Divided unit slash number (53FC##### / #) or division letter C. ABO/Rh D. Intended use (volunteer donor vs. directed donor) E. Donation type (volunteer donor vs. directed donor) F. E product code and description G. Expiration date and time H. Special testing (if applicable) I. Facility information J. Volume of the aliquot K. Anticoagulant volume of the aliquot (apheresis products only) In addition, the second tech must verify: A. The adjusted volume of the parent product.

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Step	Action
17	Have a second tech verify the correct information is printed on the pink, "Administration Record" form. Verify the following: A. Expiration date and time on the unit match on the pink form B. Irradiation status is printed on the pink form. C. CMV status of the aliquot is printed on the pink form.
18	Store the aliquot in the blood refrigerator at 1-6°C until issue. Aliquots should be transfused as soon as possible following preparation.

6. RELATED DOCUMENTS

SOP: Sterile Tubing Welder
SOP: Blood Component Irradiation
SOP: Neonatal Type and Screen and Crossmatch
SOP: ISBT-128 Label Production
Form: Product Modification Log

7. REFERENCES

1. Roback, J.D., Combs, M.R., Grossman, B.J., Hillyer, C.D. 2008. Technical Manual of the AABB, 16th ed. AABB Publishing, Bethesda, Maryland.
2. Standards for Blood Banks and Transfusion Services, 2009. AABB, 26th ed. AABB Publishing, Bethesda, Maryland.

8. REVISION HISTORY

Version	Date	Reason for Revision	Revised By	Approved By
		Supersedes SHB.010.000, SGAH.B404.02		
000	5.8.13	Section 5: Added ISBT-128 Information Section 9: Added appendix B	SCodina	NCacciabeve

9. ADDENDA AND APPENDICES

Appendix A: Preparing a Red Cell Aliquot in Sunquest
Appendix B: ISBT-128 Product Codes

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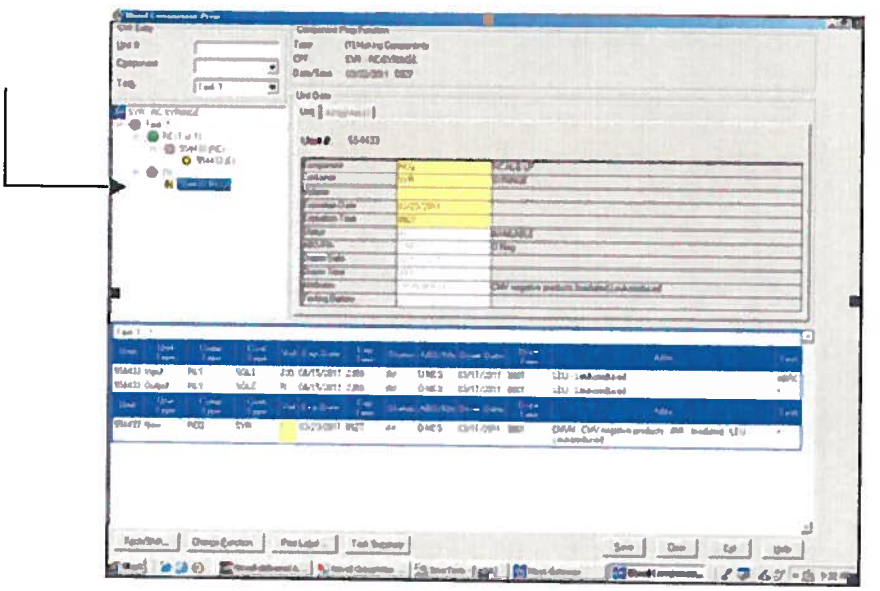
Appendix A
Preparing a Red Cell Aliquot in Sunquest

Step	Action
1	Access Sunquest function, "Blood Component Preparation."
2	In the "Lookup by" prompt, select "Component Prep Function" from the dropdown menu.
3	At the "Value" prompt, type the correct blood component preparation function and press the "Tab" key. Refer to appendix B for guidance.
4	Press the "Tab" key at the date and time prompts to default the current date and time or manually enter the date and time.
5	Click on the "Continue" button.
6	Enter the unit number and press the "Tab" key.
7	The component will autofill. Press the "Tab" key to open the task tree.
8	Click on the yellow "N" in the task tree. The screen will display the aliquot data.



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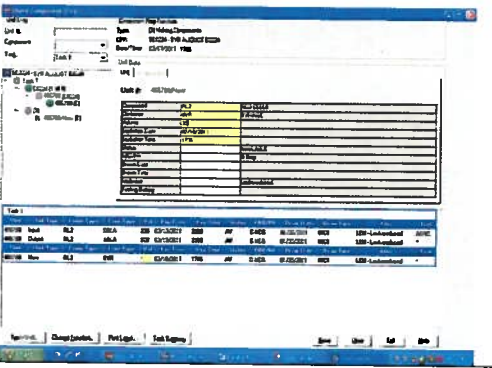
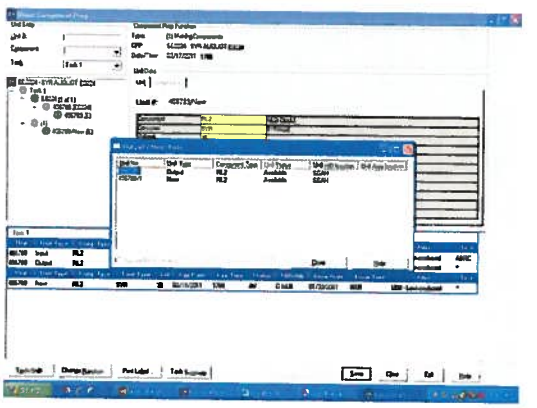
Step	Action
9	Enter the volume of the prepared aliquot and press the "tab" button. The yellow letters in the task tree will turn green and the volume of the parent unit will change based on the volume of the aliquot. 
10	Verify the accuracy of the expiration date and time assigned by the LIS. A. If the sterile connecting device was used and a closed system was maintained, the expiration date of the original unit will not change. B. If an open system was created, the expiration date and time of the parent unit will change to 24 hours from the time the open system was created.
11	Verify the accuracy of the expiration date and time assigned by the LIS. The aliquotted blood product expires 2 hours from the time of preparation, regardless of whether an open or closed system was used to prepare the aliquot.
12	Click on the "Save" button.
13	The pop-up message "File All Units?" appears. Click the "OK" button.
14	An "Output/New Units" screen will appear. Review the information for correctness and click the "Close" button. 
15	A new unit number label will generate. Apply the label to the label for the new unit over the barcode label or handwritten unit number that was previously applied.

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Appendix B
ISBT-128 Product Codes

Original Product Code	Component Prep Function	Final Product
E0226	AE0226	E0224
E0382	AE0382	E0379
E0678	AE0678	E0661
E0685	AE0685	E0668
E0686	AE0686	E0669
E4543	AE4543	E4538
E4544	AE4544	E4539
E4545	AE4545	E4540
Codabar product in allogeneic syringe	SYR	Codabar Label
Codabar product in directed syringe	SYRD	Codabar Label
Codabar product in transfer bag for larger aliquots	SPLIT	Codabar Label