

## TRAINING UPDATE

<b>Lab Location:</b>	SGMC and WOMC	<b>Date Implemented:</b>	3/25/25
<b>Department:</b>	Blood Bank	<b>Due Date:</b>	4/8/25

### DESCRIPTION OF PROCEDURE REVISION

**Name of procedure:****Red Blood Cell Aliquot Preparation (SGMC Procedure)****Description of change(s):**

The billing process for red cell aliquots was updated.

Billing will be entered at the time of allocation by the person that created the aliquot.

**Billing needed:**

- IRRC – Irradiation charge for each red cell aliquot
- SCS (in-house) or RHGBS (ARC)—Sickle testing is charged for the first aliquot made on each red cell unit (only the first aliquot)
- DCMV—CMV testing is billed on the first aliquot prepared from a red cell unit if the provider requested CMV-seronegative units. We no longer provide CMV= red cells routinely, so the provider has to order this for the patient

## SGAH.BB92 Red Blood Cell Aliquot Preparation (SGMC only)

Copy of version 7.0 (approved and current)

Last Approval or  
Periodic Review Completed 3/21/2025

Next Periodic Review  
Needed On or Before 3/21/2027

Effective Date 3/21/2025

Controlled Copy of a Manual ID 19953

Location SGMC & WOMC BB vol 3

Organization Adventist HealthCare

### Approval and Periodic Review Signatures

Type	Description	Date	Version	Performed By	Notes
Approval	Lab Director	3/21/2025	7.0	 Nicolas Cacciabeve	
Approval	BB approval	3/21/2025	7.0	Stephanie Codina	
Approval	Lab Director	8/21/2024	6.0	 Nicolas Cacciabeve	
Approval	BB approval	8/21/2024	6.0	Stephanie Codina	
Periodic review	Medical Director	11/14/2023	5.0	 Nicolas Cacciabeve	
Periodic review	BB	11/13/2023	5.0	Stephanie Codina	
Approval	Lab Director	11/18/2021	5.0	Nicolas Cacciabeve	
Approval	BB approval	11/18/2021	5.0	Stephanie Codina	
Approval	QA approval	11/18/2021	5.0	Leslie Barrett (104977)	
Periodic review	Medical Director	11/11/2019	4.0	Nicolas Cacciabeve	
Periodic review	BB	10/4/2019	4.0	Stephanie Codina	
Approval Captured outside MediaLab	Lab Director	10/12/2017	4.0	Nicolas Cacciabeve	Recorded on 6/28/2019 by Leslie Barrett (104977) when document added to Document Control
Periodic review Captured outside MediaLab	Designated Reviewer	10/12/2017	4.0	Nicolas Cacciabeve	Recorded on 6/28/2019 by Leslie Barrett (104977) when document added to Document Control

Approvals and periodic reviews that occurred before this document was added to Document Control may not be listed.

### Version History

Version	Status	Type	Date Added	Date Effective	Date Retired
7.0	Approved and Current	Major revision	3/21/2025	3/21/2025	Indefinite

6.0	Retired	Major revision	8/21/2024	8/21/2024	3/21/2025
5.0	Retired	Major revision	11/18/2021	11/18/2021	8/21/2024
4.0	Retired	First version in Document Control	6/28/2019	10/16/2017	11/18/2021

**Linked Documents**

- AG.F01 Product Modification Log, SGMC Blood Bank

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:

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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 small-volume red blood cell transfusions requested for neonates and small children as well as “split” units intended for adults at risk of volume overload. SGMC staff members perform all RBC aliquot procedures for WOMC and SGMC.
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 aliquoted red blood cell product.
4.

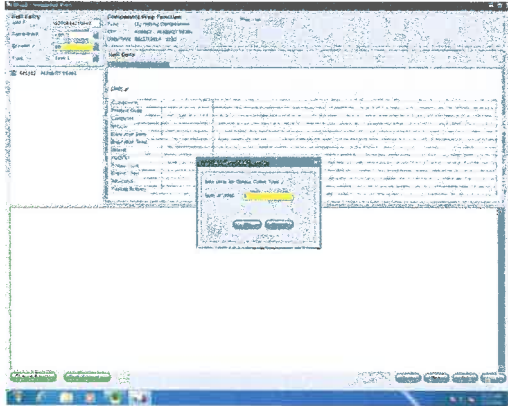
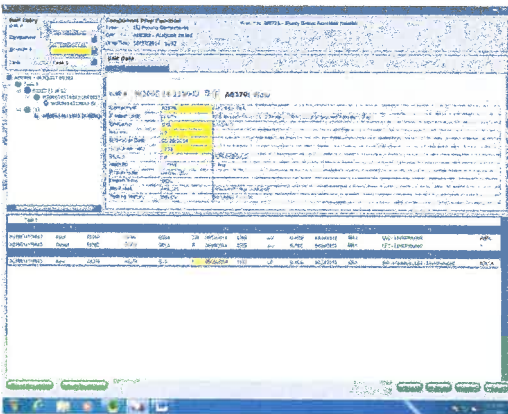
DEFINITIONS

N/A

**5. PROCEDURE**

Step	Action
1	The patient care area will order red cell aliquots using test "TRCNEO." Review the order, special instructions, and volume. Note: We also accept a TRRC order that has an indication to split a red cell unit for an adult in the comment section.
2	Obtain the supplies necessary to aliquot a red cell: A. An aliquot container a. For aliquots <20 mL, use the set with the 30cc syringe. b. For aliquots <50mL, use the set with the 55cc syringe. c. For aliquots >50mL, use a transfer pack <b>or</b> two syringes. B. Sterile welding device C. Heat sealer D. Scale E. Hemostats
3	Perform daily QC of the scale if needed.
4	Select a red blood cell that meets the recipient's transfusion specifications. 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 <b>and</b> 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 or AS-3 anticoagulant C. Leukocyte reduced D. Hemoglobin S negative E. Irradiated <i>after</i> aliquot to reduce potassium leakage F. Negative for antigens present in the baby's or mom's plasma
5	Tighten all connections. The hub connection nearest the syringe has disconnected on rare occasions.  <b>Use aseptic technique for this procedure!</b>

Step	Action
6	Document the following on the "Product Modification Log" A. Tech identification B. Date of modification C. Unit number D. E code of original and new units (or A code if applicable) E. Lot number of bag or syringe and expiration date of syringe F. Wafer lot number
7	Gently mix the primary bag to resuspend the red cells.
8	Connect the filter-syringe set or transfer bag (whichever is used) to the primary red cell per procedure, "Sterile Tubing Welder."
9	If a transfer bag is used, tare the scale using an empty 150 mL transfer bag.
10	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 10 mL of red cells to compensate for the volume that will be lost in the tubing. DO NOT push free air from the syringe back onto the parent unit.
11	Clamp the line when an appropriate amount of blood has been transferred. Seal the line using a tube sealer at least twice. <b>Do not separate the aliquot from the parent unit at this time.</b> 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. C. Prepare at least one segment from the line if the product requires crossmatch.
12	Access Sunquest function, Blood Component Preparation.  Note: DO NOT branch to blood component preparation (BCP) from blood order processing (BOP).
13	At the "Value" prompt, type the aliquot function that corresponds to the red cells to be aliquotted then press the "Tab" key. The aliquot function is A + the E code of the red cell product. Refer to appendix A for additional information.
14	Press the tab key to default the current date and time as the aliquot time. Enter the date and time on which the aliquot was prepared if prepared at an earlier time (such as during computer downtime).
15	Click the "continue" button.
16	A second "Blood Component Prep" screen will appear. A. At the "Unit #" prompt, scan the unit number DIN of the parent red cell to be aliquoted. B. At the "Component" prompt, scan the product code of the parent unit to be aliquoted. This will autofill both the product code and division fields.

Step	Action
17	<p>A pop-up screen will appear asking the user to indicate the number of units that will be prepared (ie the number of aliquots being prepared at one time).</p> <p>A. Enter 1 in the field.</p> <p>B. Click the “OK” button.</p> 
18	<p>On the next screen, click on the yellow circle containing the N (for new product).” Enter the volume of the red cell aliquot being prepared, then press the “Tab” key.</p> 
19	<p>Verify the new expiration dates/times. Document the new expiration date and time on the log.</p> <p>A. The expiration date of the parent unit will not change if a closed system is used.</p> <p>B. The expiration date of the parent unit will change to 24 hours from the time of aliquot if an open system is used (ie the sterile connection failed). If an open system is used, the output blood product codes in appendix A do not apply. See a supervisor for guidance.</p> <p>C. The expiration date of the aliquot will always be 24 hours from the time of preparation, regardless of whether an open or closed system is used.</p>
20	Click the “Save” button.

Step	Action
21	<p>A “Preview Output / New Units” screen will appear. Review the information to ensure accuracy, then click on the “finish” button to generate new labels for the parent and aliquotted products.</p> <p>A. The first time an aliquot is prepared, the system will convert the parent unit to division “A0” and the aliquot to division “B0.”</p> <p>B. All subsequent divisions will assign a division code to the aliquot using the division labeling convention of “Aa, Ab, Ac, Ad.....Az.”</p>
22	Adhere the new labels to BOTH the parent unit and the aliquot. <b>Ensure you adhere the “AO” label to the parent unit.</b>
23	After labeling, disconnect the aliquot from the parent unit and discard the filter. Use the extra segment for crossmatching, if indicated.
24	If the original product is an apheresis red cell, calculate the amount of anticoagulant in the aliquot and parent red cell products and document in the appropriate space on the blood product label. Each mL of blood contains approximately 0.14 mL of anticoagulant.
25	<p>Document the following on the “Blood Product Modification Log.”</p> <p>A. Division number new product</p> <p>B. Documentation of the weld inspection</p>
26	Perform the blood label check for BOTH units in Sunquest per procedure.
27	<p>Irradiate the aliquot per procedure. Do not perform the blood component preparation functions for irradiation as the aliquot function automatically performs these steps.</p> <p>Note: The output blood product automatically converts to an irradiated product E code. You MUST either irradiate the unit or change the E code if you are splitting a unit for an adult patient.</p>
28	Allocate and/or crossmatch the red cell aliquot per procedure.
29	Return the parent product and the aliquot to the appropriate shelves of the refrigerator. Aliquots should be transfused as soon as possible after preparation.

**Billing**

Step	Action
1	<p>We must bill testing performed on neonatal aliquots separately:</p> <ul style="list-style-type: none"> <li>• Irradiation is billed for <u>each</u> red cell aliquot using code <b>IRRC</b>.</li> <li>• Sickle screening is billed on the <u>first</u> aliquot prepared from a unit using code <b>SCS</b> for in-house testing and <b>RHGBS</b> for testing performed at ARC.</li> <li>• If the provider ordered CMV-seronegative red cells, we will bill CMV testing for the <u>first</u> aliquot prepared from the unit using code <b>DCMV</b>.</li> </ul>

Step	Action
2	Billing is added in blood order processing. Refer to the "Adding Billing for Unit Testing" section of procedure, "Manual Billing and Crediting Blood Bank Testing."

**6. RELATED DOCUMENTS**

SOP: Antigen Typing

SOP: Crossmatch

SOP: Neonatal Type and Screen and Crossmatch

Form: Product Modification Log (AG.F01)

SOP: Sterile Tubing Welder

SOP: Scale Quality Control

SOP: Blood Label Check

SOP: Blood Component Irradiation

SOP: Manual Billing and Crediting Blood Bank Testing

**7. REFERENCES**

1. Technical Manual of the AABB, current ed. AABB Publishing, Bethesda, Maryland.
2. Standards for Blood Banks and Transfusion Services, current 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
001	5.27.14	Section 5: Removed references to codabar-labeled units. Updated LIS instructions to include the Sunquest v6.4 upgrade. Moved appendix for blood component preparation in the LIS to the procedure. Section 9: Re-numbered appendix Footer: version # leading zeros dropped due to new EDCS in use as of 10/7/13.	Scodina	Ncacciabeve
2	6.1.16	Section 5: Changed dead volume for tubing from 5mL to 10mL due to hospital tubing change. Added statement about irradiation of units that are split for adults. Section 7: Updated references	Scodina	Ncacciabeve
3	9.15.17	Section 5: Added instructions to prepare an extra segment when crossmatch is indicated. Updated volume for syringe due to free air. Stated free air from syringe is not pushed into parent unit.	SCodina	NCacciabeve

Adventist HealthCare

Site: Shady Grove Medical Center

Title: Red Blood Cell Aliquot Preparation

4	11.18.21	Section 5: Updated syringe from 60cc to 55cc per manufacturer's change. Section 7: Updated references.	SCodina	NCacciabeve
5	8.21.24	Removed requirement to give neonates CMV-seronegative red blood cells	SCodina	NCacciabeve
6	3.21.25	Added the billing section (it no longer pops up at issue).	SCodina	NCacciabeve

## 9. ADDENDA AND APPENDICES

### Appendix A: Red Blood Cell Aliquot Blood Component Prep Functions

**Appendix A**  
**Red Cell Aliquot Blood Component Prep Functions**

**Red Blood Cell Aliquot Products**

Original Product Code	Component Prep Function	Final Product
E0226	AE0226	A0224
E0382	AE0382	A0379
E0678	AE0678	A0661
E0685	AE0685	A0668
E0686	AE0686	A0669
E4543	AE4543	A4538
E4544	AE4544	A4539
E4545	AE4545	A4540