TRAINING UPDATE

Lab Location:	GEC	**Date Implemented:**	2.16.2018
Department:	Blood Bank	**Due Date:**	3.2.2018

DESCRIPTION OF PROCEDURE REVISION

Name of procedure:

Blood Components

Description of change(s):

1. We converted the Emergency Release form FROM a 3-part form to a 1-part form.
2. We will no longer provide a copy of the form to the floor for the patient chart.
3. If we need a provider signature, simply make a copy of the original form on the fax machine and provide it to the patient care area.

Electronic Document Control System

Document No.: GEC.BB02[6]
Title: Blood Components
Owner: LESLIE BARRETT
Status INWORKS
Effective Date: 16-Mar-2018

Next Review Date:

Non-Technical SOP

Title	**Blood Components**	
Prepared by	Leslie Barrett	Date: 6/16/2009
Owner	Stephanie Codina	Date: 7/29/2010

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**

TABLE OF CONTENTS

1. PURPOSE

This procedure describes the process for shipping, storage, transfer, and issue of blood components; and the process to following in the event of an adverse transfusion reaction.

2. SCOPE

This procedure applies to blood components stored and transfused at GEC.

3. RESPONSIBILITY

SGMC Blood Bank (SGBB) staff ship red blood cells to maintain stock at the Germantown laboratory.

Germantown Lab (GEC) staff document receipt, storage and disposition of red blood cells; and notify SGBB whenever units are released for transfusion and in the event of an adverse reaction.

4. DEFINITIONS

SGBB – Shady Grove Medical Center Blood Bank
GEC – Germantown Emergency Center Laboratory

5. PROCEDURE

Receiving Blood Products into Inventory

Step	Action
1	Two units of O negative red blood cells are routinely stocked in the GEC laboratory. A. Replacement unit(s) will be provided by SGBB upon notification of transfusion of any component. B. SGBB will coordinate the rotation of inventory to avoid expiration of components.

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>2</td><td>When blood products arrive at GEC, staff will remove blood products from the shipping container and visually inspect the units for color and appearance.
A. Visual abnormalities include the following:
a. Segments that appear lighter or darker in color than the contents of the primary bag
b. Purple color of red cells
c. Clots
d. White particulate matter in the primary container
e. Supernatant fluid that is discolored from normal appearance
f. Gross lipemia
g. Foreign objects in the primary container or ports
B. Notify SGBB staff immediately if the visual inspection is unacceptable or abnormal.</td></tr>
<tr><td>3</td><td>Verify that the units were maintained within acceptable temperature range by reading the HemoTemp II activator. Document the temperature of the blood products on the Blood Product Disposition Log. Refer to Appendix A for additional information.
A. Examine the irreversible “flower” indicator.
a. If the flower is a blue color, the product has maintained appropriate temperatures.
b. If the flower is a non-blue color, the product should be discarded.
c. Note: The flower may lose its blue color after it has been applied to the blood product for >48 hours. This indicator should only be used at the time the blood product is received.
B. Examine the reversible indicator (numbers) to determine the temperature of the blood product.
<table>
<tr><th>Reversible Indicator</th><th>Interpretation</th></tr>
<tr><td>Red 1-3</td><td>1°C</td></tr>
<tr><td>Green 1-3</td><td>2°C</td></tr>
<tr><td>Blue 1-3</td><td>3°C</td></tr>
<tr><td>Red 4-6</td><td>4°C</td></tr>
<tr><td>Green 4-6</td><td>5°C</td></tr>
<tr><td>Blue 4-6</td><td>6°C</td></tr>
<tr><td>Red 7-9</td><td>7°C</td></tr>
<tr><td>Green 7-9</td><td>8°C</td></tr>
<tr><td>Blue 7-9</td><td>9°C</td></tr>
<tr><td>Invisible numbers</td><td>Out of appropriate temperature range; discard per procedure</td></tr>
</table></td></tr>
<tr><td>4</td><td>Check the Donation Identification Numbers (DIN) (AKA unit numbers) against the “Internal Blood Product Transfer/Shipping Form.” Sign, date, and time the form in the “For receiving site” section. Notify SGBB staff or a supervisor immediately if discrepancies exist.</td></tr>
</table>

Step	Action
5	Record the following on the "Blood Product Disposition Log." A. DIN (AKA unit number) (write the DIN on the form or adhere a label from the back of the bag). B. Unit ABO/Rh C. Unit Expiration date D. Date and time received E. Acceptance of visual inspection (Y if visual inspection is satisfactory, N if visual inspection is unsatisfactory) F. Documentation that the units were maintained at an acceptable temperature during shipment (HemoTemp II Indicator) G. Tech identification or initials
6	Place the units on the designated shelf in the blood bank refrigerator. A. Red blood cell products are stored at temperatures between 1-6°C. B. Red blood cell products are shipped at temperatures between 1-10°C. C. Red cell storage periods are designated by anticoagulant preservative. The expiration date is printed on the blood product label. a. ACD and CPD units = 21 days b. CPDA-1 units = 35 days c. Adsol units (AS-1, AS-3, AS-5) = 42 days
7	Retain Transfer/Shipping form in the appropriate file.

Returning Blood Products to SGBB

Step	Action
1	SGBB staff members will coordinate rotation of the GEC red cell inventory to avoid expiration. A. SGBB will ship new red cells for GEC inventory. B. GEC staff will return the current inventory that is nearing expiration in the same container used to ship blood product to GEC and the courier will immediately return the container to SGBB.

Step	Action
2	Visually inspect the red cells to be returned to SGBB for color and appearance. A. Visual abnormalities include the following: a. Segments that appear lighter or darker in color than the contents of the primary bag b. Purple color of red cells c. Clots d. White particulate matter in the primary container e. Supernatant fluid that is discolored from normal appearance f. Gross lipemia g. Foreign objects in the primary container or ports B. Notify SGBB staff immediately if the visual inspection is unacceptable or abnormal. C. Blood products that do not meet requirements for issue or do not pass visual inspection should be labeled "DO NOT TRANFUSE" and returned to SGBB for discard. D. Complete a PI/Variance form documenting the reason for discard. Forward the PI/variance form to SBGG with the blood product. E. Do not discard unused blood products at GEC.
3	Complete an "Internal Blood Product Transfer/Shipping Form" with the following: A. Circle the appropriate transferred "to" and "from" locations B. DIN (AKA unit number) (write or use a label from the back of the bag). C. Unit ABO/Rh D. Product type (RC – red cells) E. Unit expiration date F. Date and time packed G. Signature
4	Record the following on Blood Product Disposition Log under section "Blood Products Returned to SGBB." A. Date and time the blood products are packed for shipment. B. Indication whether the visual inspection is acceptable. C. Tech identification or initials.

Step	Action
5	Pack the units for transport. Red cell units must maintain a shipping temperature between 1-10°C. A. If a medical transport cooler is used, a. Medical transport coolers are shipped from SGBB with the appropriate ice blocks in place. Do not remove ice blocks from the cooler. b. Place the red cells in the wire basket located inside the cooler. i. Divide the blood products equally among each side of the wire basket. Lay the blood product flat (horizontal) in the cooler. ii. Place 1 polar pack gel on each side of the wire basket, on top of the red cells. c. Place a copy of the transfer form inside the cooler. d. Place the cooler lid on the cooler and secure shut. B. If a shipping box is used, a. Place the red cells inside a plastic liner and seal the liner. b. Place the red cells in a blood shipping box in an upright fashion. Do not lay units flat. c. Place approximately 7 lbs (3 Kg) of wet ice in a plastic bag. Tie the bag closed. Place the ice on top of the blood product bags. d. Place the Styrofoam insert. e. Place one copy of the transfer form on top of the Styrofoam insert. f. Seal the box with tape and write the destination across the top.
6	Send the blood products with the courier to SGBB.
7	Retain a copy of the "Internal Blood Product Transfer/Inventory Form" in the appropriate file.

Issuing Blood Products

Step	Action
1	Emergency Department personnel will notify the laboratory that uncrossmatched blood is needed. A. A "Request for Emergency Release of Blood Products" form will be presented or prepared in the GEC lab (DO NOT withhold blood products if the form is not brought). B. Complete the form with the following information: a. Patient name and medical record number (if not already present) b. Indicate what pre-transfusion testing has not been completed on the form. c. DIN (AKA unit number) of each red cell to be issued. d. ABO/Rh of each red cell to be issued. e. Expiration date of each red cell to be issued. f. Type of blood product issued.
2	Visually inspect each red cell to be issued and document whether the visual inspection was acceptable on the form. A. Y = Yes and N = No B. Visual abnormalities include the following: a. Segments that appear lighter or darker in color than the contents of the primary bag b. Purple color of red cells c. Clots d. White particulate matter in the primary container e. Supernatant fluid that is discolored from normal appearance f. Gross lipemia g. Foreign objects in the primary container or ports C. Notify SGBB staff immediately if the visual inspection is unacceptable or abnormal.
3	Apply an orange sticker to each unit indicating the unit is "uncrossmatched" or "emergency released."
4	Complete the issue information (issued to, issued by, date issued, time issued).

Step	Action
5	There may be times when the provider is unable to sign the "Request for Emergency Release of Blood Products" form immediately. NEVER withhold blood products if the form is not signed by the provider. If the form **has NOT** been signed by the provider: A. Print the name of the physician below the signature line on the form. B. Make one copy of the form. C. Give the copy to the patient care area to obtain the provider's signature. D. Attach the signed form to the original form for storage.
6	Remind nursing personnel that a patient type and screen sample should be collected as soon as possible (if not already done).
7	Document unit issue and visual inspection to ED on Blood Product Disposition Log form. Fill in the following information for each unit issued: A. Date and time issued B. Documentation of visual inspection C. Tech identification/initials
8	Immediately order replacement O negative red cell units from SGBB.
9	Fax one copy of each completed "Request for Emergency Release of Blood Products" form to SGBB (Fax 240-826-5864). Send the patient's type and screen sample to SGBB as soon as possible.

Return of Issued Blood Products from the ED

Step	Action
1	If an issued blood unit is returned (not transfused) from ED, it cannot be returned to inventory or reissued for transfusion until the following conditions have been met: A. The container closure has not been penetrated or entered in any manner. This is to be certain that sterility is maintained. B. The unit of blood has not remained out of a monitored refrigerator longer than 30 minutes **and** the temperature of the unit must be between 1° and 10°C. C. Sealed segments of integral donor tubing must have remained attached to the container.

Step	Action
2	Immediately determine the temperature of the blood product. A. Wrap the unit around a thermometer and secure with a rubber band. B. Allow the thermometer time to equilibrate then read the temperature. C. The unit must be between 1-10°C. If the temperature of the unit is <1°C or >10°C, the blood products must be discarded. a. Blood products that do not meet requirements for issue or do not pass visual inspection should be labeled "DO NOT TRANFUSE" and returned to SGBB for discard. b. Complete a PI/Variance form documenting the reason for discard. Forward the PI/variance form to SBGG with the blood product. c. Do not discard unused blood products at GEC.
3	Document unit return on Blood Product Disposition Log. Include the following: A. Date and time the unit was returned to GEC lab B. Documentation that visual inspection was acceptable. Do not return the unit to inventory if the visual inspection is unsatisfactory. C. Temperature of the unit (must be between 1-10°C) D. Tech identification or initials. Note: The records must indicate that the unit has been inspected and that it is acceptable for reissue.
4	Notify SGBB staff that the unit was returned to inventory and the date/time of return so they can be updated in the laboratory computer system.

Transfusion Reactions

Step	Action
1	GEC staff will be notified by the transfusing personnel of all suspected transfusion reactions/incidents/errors. **Note**: Refer nursing personnel to the AHC Transfusion Reaction Procedure 001-18-202 as needed.
2	If a transfusion reaction is suspected, inform the clinical staff to STOP the transfusion immediately.
3	Obtain the patient name, medical record number, caller's name and phone number. Contact SGBB staff and relay this information (240-826-6092). SGBB staff will call the transfusing personnel and initiate routine transfusion reaction protocol.
4	GEC staff will immediately collect and send the post-transfusion blood bank specimen, blood unit bag with tubing and fluids, and associated paperwork to SGBB for workup.

Step	Action
5	SGBB will complete the transfusion reaction investigation per routine procedure and document the findings in the laboratory computer system.

6. RELATED DOCUMENTS

- Request for Emergency Release of Blood Products Form
- Internal Blood Product Transfer/Shipping Form (AG.F376)
- GEC Blood Product Disposition Log (AG.F297)

SGMC Blood Bank procedures:

- Storage of Blood and Components
- Procurement of Blood Products and Desired Inventory Levels
- Transfer of Blood Products
- Emergency Release of Blood Products

7. REFERENCES

1. Fung, MK, Grossman, BJ, Hillyer, CD, and Westhoff, CM. 2014. Technical Manual of the AABB, 18th ed. AABB Publishing, Bethesda, Maryland
2. Standards for Blood Banks and Transfusion Services, 30th ed. 2016, AABB Publishing, Bethesda, Maryland.

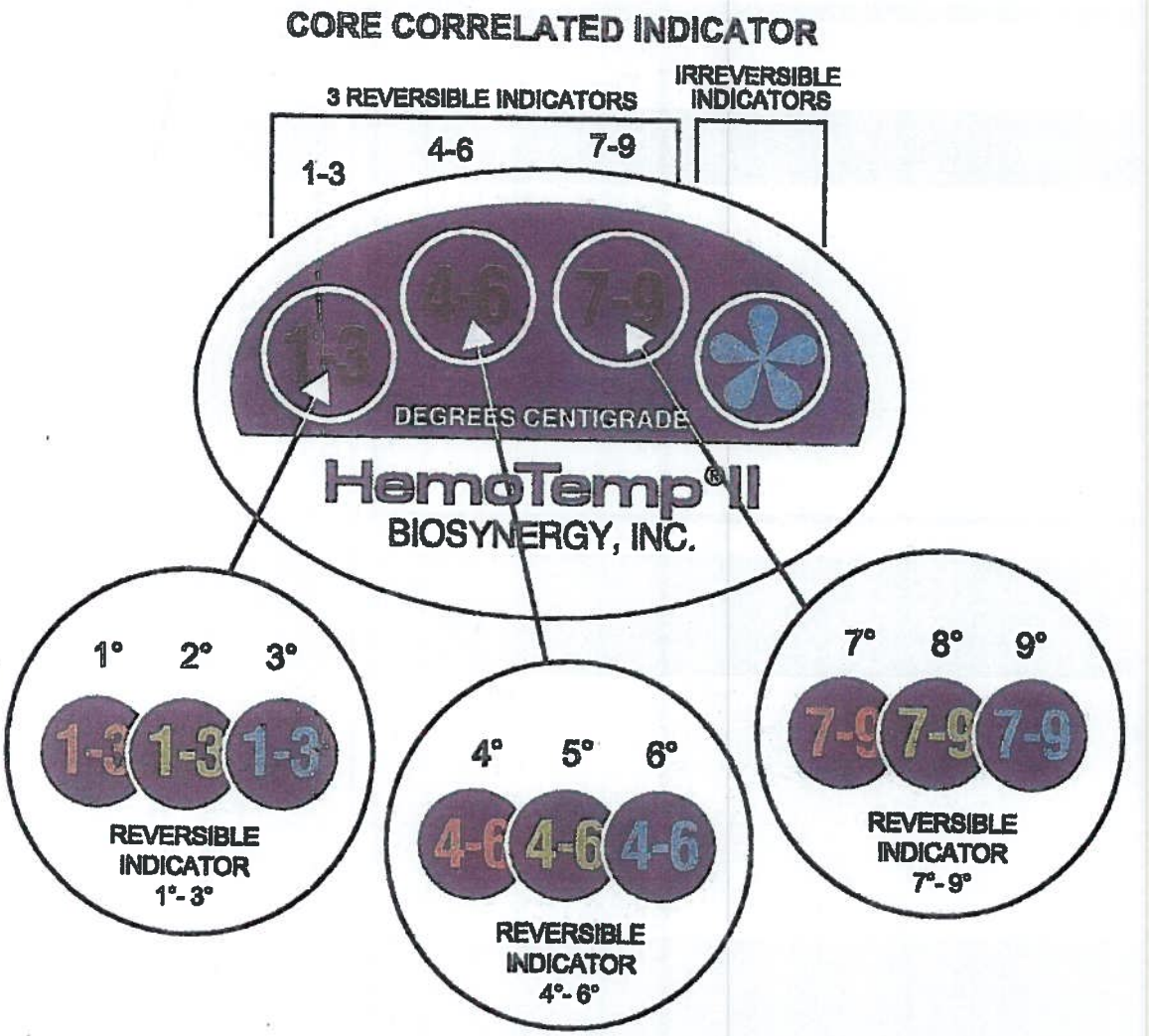
8. REVISION HISTORY

Version	Date	Reason for Revision	Revised By	Approved By
		Supersedes SOP GEC.B001.001		
000	7/29/2010	Update owner Section 5.F: add Hospital policy, add item 2	L. Barrett	Dr Cacciabeve
001	10.9.12	Section 5: Added instructions for performing visual inspection, Updated instructions for shipping blood products in a medical transport cooler, Updated Emergency Release procedure with instructions for use of new form.	SCodina	NCacciabeve
002	7.16.14	Section 5: Updated format for clarity. Updated policy to reflect changes in the Emergency Release and Blood Product Disposition forms. Added requirement to send unacceptable blood products to SGBB for discard. Section 9: Added HemoTemp II information. Footer: version # leading zero's dropped due to new EDCS in use as of 10/7/13.	SCodina	NCacciabeve
3	8.3.16	Updated SG hospital name throughout. Section 5: Updated HemoTemp indicator to HemoTemp II.	SCodina	NCacciabeve
4	4.20.17	Section 5: Updated instruction for completing internal transfer form. Updated hospital reaction policy and SOP numbers Section 6: Updated internal form number and SOP titles	LBarrett	NCacciabeve
5	2.14.18	Section 5: Updated AHC policy number for transfusion reaction. Updated procedure to reflect new updated emergency release form (1 part vs 3 part)	SCodina	NCacciabeve

9. ADDENDA AND APPENDICES

Appendix A: How to Read the HemoTemp II Indicator

Appendix A
How to Read the HemoTemp II Indicator



COLOR-TEMPERATURE INTERPRETATION

- Temperature is in the lower number of the indicator range. (1°C, 4°C, 7°C)
- Temperature is in the middle of the indicator range. (2°C, 5°C, 8°C)
- Temperature is in the higher number of the indicator range. (3°C, 6°C, 9°C)