

**TRAINING UPDATE**

**Lab Location:** WAH                      **Date Implemented:** 10.18.2013  
**Department:** Blood Bank            **Due Date:** 11.15.2013

**DESCRIPTION OF PROCEDURE REVISION**

<b>Name of procedure:</b>
Neonatal Exchange Transfusion (WAH BB ONLY)
<b>Description of change(s):</b>
<ol style="list-style-type: none"><li>1. We created a form that will be used to gather the information required to order reconstituted whole blood from SGAH. The form basically contains information about the mom, baby, and unit.</li><li>2. WAH staff will aliquot a small sample of mom's plasma send it to SGAH for crossmatching when mom has clinically-significant antibodies. This is intended to avoid situations where we find an incompatible crossmatch after the product has been prepared and shipped to WAH. This will be used to avoid a mismatch. <b>The actual crossmatch will be performed in the LIS by WAH staff after the product has arrived using mom's original, labeled T&amp;S sample.</b></li></ol>

Non-Technical SOP

<b>Title</b>	<b>Neonatal Exchange Transfusion</b>	
<b>Prepared by</b>	Stephanie Codina	Date: 12/28/2010
<b>Owner</b>	Stephanie Codina	Date: 12/28/2010

<b>Laboratory Approval</b>		
<b>Print Name and Title</b>	<b>Signature</b>	<b>Date</b>
<i>Refer to the electronic signature page for approval and approval dates.</i>		
<b>Local Issue Date:</b>		<b>Local Effective Date:</b>

<b>Review:</b>		
<b>Print Name</b>	<b>Signature</b>	<b>Date</b>

Document: WAH.BB69[1] Status:INWORKS,Effective:11/15/2013, Check Version Before Use

Form revised 3/31/00

**TABLE OF CONTENTS**

1. PURPOSE.....	2
2. SCOPE.....	2
3. RESPONSIBILITY.....	2
4. DEFINITIONS.....	2
5. PROCEDURE.....	3
6. RELATED DOCUMENTS.....	5
7. REFERENCES.....	5
8. REVISION HISTORY.....	5
9. ADDENDA AND APPENDICES.....	5

**1. PURPOSE**

Neonatal exchange transfusion is the treatment of choice for Hemolytic Disease of the Newborn (HDN), hyperbilirubinemia, disseminated intravascular coagulation (DIC), and occasionally the elimination of toxins, drugs, and chemicals in neonates. The procedure consists of replacing one to two whole blood volumes and has several desired effects. Removal of the infant's blood reduces antibody coated red cells, unconjugated bilirubin, and the number of unbound antibody molecules available to bind newly-formed antigen-positive red blood cells. The red cells used for replacement are compatible with the infant and/or maternal specimen and provide increased oxygen-carrying capacity. The plasma restores albumin and coagulation factors.

**2. SCOPE**

This procedure applies to any neonate for whom an exchange transfusion has been ordered by a physician or licensed independent practitioner (LIP).

**3. RESPONSIBILITY**

All blood bank staff members must understand the exchange transfusion process and know how to prepare blood products for transfusion during an exchange procedure.

**4. DEFINITIONS**

Neonate: An infant <4 months of age.

Document: WAH.BB69[1] Status: INWORKS, Effective: 11/15/2013, Check Version Before Use

Form revised 3/21/00

**5. PROCEDURE**

Step	Action
1	Obtain a "WAH Neonatal Exchange Transfusion Request" form immediately when notified that a neonatal exchange transfusion will take place.
2	<p>Request the following information from the patient care area and document on the form.</p> <ul style="list-style-type: none"> <li>A. Infant's name and medical record number (Note: If blood products for an exchange transfusion are requested before an infant has been delivered, order the blood product using the mother's medical record number and type a comment stating the exchange is for an infant that has not been delivered).</li> <li>B. Mother's name and medical record number.</li> <li>C. Date and time of exchange procedure</li> <li>D. The desired hematocrit of the final product (usually 50-60%). An exact hematocrit is very difficult to achieve, so a range is generally used.</li> <li>E. Volume of whole blood requested.</li> </ul>
3	Obtain a T&S on the mother <b>and</b> TSNEO on the infant if not already available. Instruct the floor to place a "transfuse neonatal whole blood (TWBNEO)" order in Cerner.
4	<p>Inform the ordering location that the reconstituted whole blood product will be ordered from SGAH.</p> <ul style="list-style-type: none"> <li>A. Confirm the time of the exchange procedure; exchange products are only good for a maximum of 24-hours, which includes preparation and transport time.</li> <li>B. Document SGAH notification in the Communication Log.</li> </ul> <p>Notify the pathologist on call or a supervisor if the infant's condition is critical and exchange transfusion must take place too quickly to obtain reconstituted whole blood from SGAH.</p>
5	Document mom's ABO/Rh and antibody history on the form.
6	Notify the SGAH lab that an exchange transfusion procedure is planned and fax a copy of the completed form to them. <b>Inform SGAH staff of any clinically-significant antibodies present in the mother.</b>
7	<p>Prepare an aliquot of mom's plasma and send to SGAH via courier for crossmatch testing. At a minimum, the aliquot must be labeled with:</p> <ul style="list-style-type: none"> <li>A. Mom's full name</li> <li>B. Mom's MRN</li> <li>C. Mom's blood bank number</li> </ul>

Document: WAH.BB69[1] Status: INWORKS, Effective: 11/15/2013, Check Version Before Use

Form revised 3/31/00

Document: WAH.BB69[1] Status:INWORKS,Effective:1/15/2013, Check Version Before Use

Step	Action
8	<p>SGAH will find a red cell that meets the following specifications:</p> <ul style="list-style-type: none"> <li>A. Group O (Rh-negative if the recipient is Rh-negative)</li> <li>B. Fresh red cells (&lt;7 days old) to avoid high levels of potassium and to maximize red cell survival</li> <li>C. CPDA-1 anticoagulant</li> <li>D. CMV-seronegative</li> <li>E. Irradiated (note: irradiation should be performed immediately before the exchange transfusion to minimize the potassium leak)</li> <li>F. Sickle-negative</li> <li>G. Negative for any antigens that correspond to clinically-significant maternal antibodies.</li> <li>H. AHG crossmatch compatible with the mother's plasma. If the mother's plasma is not available, the unit should be AHG crossmatch compatible with the infant's plasma.</li> </ul>
9	<p>SGAH staff will notify WAH staff as soon as the blood product is ready for pickup.</p> <ul style="list-style-type: none"> <li>A. WAH staff will send a courier to SGAH to pickup the blood product.</li> <li>B. SGAH staff will complete the blood supplier transfer paperwork to include transfer of both the red cell and plasma product.</li> <li>C. SGAH staff will transfer the reconstituted whole blood product to WAH in the LIS using function, "Blood Status Update."</li> <li>D. SGAH staff will include the completed "WAH Neonatal Exchange Transfusion Request" form in the box with the blood product.</li> </ul>
10	<p>Upon arrival, WAH staff will receive the blood product in the computer per procedure, "Transfer of Blood Products."</p>
11	<p>Allocate the unit to the recipient using Sunquest function "Blood Order Processing."</p> <ul style="list-style-type: none"> <li>A. The component type will be "RWP."</li> <li>B. Freetext a comment into the comment field, "Reconstituted whole blood using plasma unit number [<i>list unit number</i>]. Post hematocrit XX%."</li> <li>C. The post-reconstitution hematocrit determination will be performed by SGAH staff.</li> </ul>
12	<p>Crossmatch the reconstituted whole blood product using the mother's plasma (preferred) or the infant's plasma per "Crossmatch" procedure. Both AHG and immediate spin crossmatching must be performed.</p>
13	<p>Store the reconstituted whole blood at 1-6°C until issue or expiration.</p>
14	<p>Notify the patient care area that the blood product is available. Reconstituted whole blood has a short expiration date.</p>
15	<p>Notify the Blood Bank Supervisor or on-call pathologist if questions or issues arise.</p>

Form revised 3/31/00

**6. RELATED DOCUMENTS**

SOP: Crossmatch

SOP: Transfer of Blood Products

Form: WAH Neonatal Exchange Transfusion Request (AG.F258)

**7. REFERENCES**

A. Roback, J.D., Grossman, B J., Harris, T., and Hillyer, C.D. 2011. Technical Manual of the AABB, 17<sup>th</sup> ed. AABB Publishing, Bethesda, Maryland.

B. Standards for Blood Banks and Transfusion Services, 2012. AABB, 29<sup>th</sup> ed. AABB Publishing, Bethesda, Maryland.

**8. REVISION HISTORY**

Version	Date	Reason for Revision	Revised By	Approved By
		Supersedes WAB403.00		
000	10.15.13	Section 5: Updated format of procedure; created new form "WAH Neonatal Exchange Transfusion Request." Added instructions for completing form. Section 6: Added form Footer: version # leading zero's dropped due to new EDCS in use as of 10/7/13	SCodina	NCacciabeve

**9. ADDENDA AND APPENDICES**

N/A

Document: WAH.BB69[1] Status: INWORKS, Effective: 11/15/2013, Check Version Before Use

Form rev'ed 3/31/00



### WAH Neonatal Exchange Transfusion Request

**Part 1: To be completed by WAH staff**

(Call SGAH and fax form as soon as notification received)

**Infant's Information**

<b>Name</b>	
<b>Medical Record Number</b>	

**Mom's Information**

<b>Name</b>	
<b>Medical Record Number</b>	
<b>ABO/Rh</b>	
<b>Antibody History</b>	

**Product Information**

<b>Date/Time of Exchange</b>	
<b>Desired Hematocrit</b>	
<b>Volume Requested</b>	

-----  
**Part 2: To be completed by SGAH staff**

(Return completed form to WAH with blood product)

<b>Unit Number</b>	
<b>Antigen Typing</b>	
<b>Crossmatch Results</b>	Perform AHG and IS crossmatch between mom's aliquot and red cell unit to ensure compatibility before reconstitution. DO NOT enter the crossmatch results in the LIS; WAH will perform AHG and IS crossmatch using mom or baby's original T&S specimen and in the LIS.
<b>Final Hematocrit</b>	
<b>Final Volume</b>	
<b>Expiration Date and Time</b>	