University of Washington Medical Center 1959 NE Pacific Street. Seattle, WA 98195 Transfusion Services Laboratory Policies and Procedures Manual Original Effective
Date:10-28-2020
Revision Effective Date:

Number: PC-0081.05

10-03-2022

TITLE: Massive Transfusion Protocol & Emergency Release of Blood Components at Northwest Campus

#### **PURPOSE:**

To provide instruction for preparing and releasing universal donor products include uncrossmatched group O red blood cell components (RBC), plasma, cryoprecipitate and platelets in emergency situations including bleeding events such as massive transfusion protocol (MTP), OB Hemorrhage.

## PRINCIPLE & CLINICAL SIGNIFICANCE:

The laboratory must have a process in place to provide blood components including uncrossmatched RBCs for rapid delivery to patient care areas during bleeding emergencies

## **Clinical Significance:**

Rapid replacement of RBCs during bleeding events can be critical for preventing brain damage and cardiac arrest associated with hemorrhage. Platelets, plasma, and cryoprecipitate are used to support coagulation and hemostasis.

#### **POLICIES:**

- All orders for uncrossmatched RBCs must be authorized by a physician with a signed statement the patient's condition warrants transfusion prior to the completion of compatibility testing.
  - An Emergency Release of Uncrossmatched Blood form is filled out and sent with uncrossmatched RBC for provider signature verifying transfusion is necessary prior to completion of testing
- NW staff will notify the TSL when the following occur and the TSL will notify the TSL Physician On-Call.
  - Activation of an MTP or OB bleed or Neonatal Bleeding Emergency
  - Release of uncrossmatched RBCs to patients with antibodies
  - TSL Medical Director On-Call will evaluate the need for Rh immune globulin when Rh positive cellular components are transfused to Rh negative recipients
- All neonatal bleeding emergencies will be communicated verbally by clinical teams. TSS is to document the order using form UH3364 Transfusion Services Test & Blood Product Request Form

## **Red Blood Cell Components**

- UNCROSSMATCHED Group O universal donor RBC components will be provided in the initial response of MTP order - <u>refer to Table 1</u>. Once the initial response is made and pretransfusion testing is complete, crossmatched RBCs will be provided
  - Rh type is selected based on patient's historical Rh type. When a historical Rh is not available, Rh is selected based on the patient's sex and age – refer to Table 1

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- Both O positive and O negative RBC are available in the HaemoBank for issue as uncrossmatched in bleeding emergencies
- The ability to select uncrossmatched RBCs from the HaemoBank is based on age and sex
  of the patient and patient's Rh when known. To select the correct uncrossmatched RBC
  from the HaemoBank refer to section Selecting Uncrossmatched RBCs from
  HaemoBank, Step 6
- Red cell components ordered as emergency outside of MTP activations can be initially issued as uncrossmatched or crossmatched if time allows

TABLE 1: Selection of UNCROSSMATCHED RBC Components for Bleeding Emergencies

Patient Rh is Known	Then	
	Patient Rh	Select
YES	Rh Negative	O NEGATIVE
	Rh Positive	Select based on Patient Age and Gender
	Patient Age and Gender	Select
NO	<ul><li>Females &lt; 50 years old</li><li>Males &lt;15 years old</li><li>Unknown</li></ul>	O NEGATIVE
	<ul><li>Females ≥ 50 years old</li><li>Males ≥ 15 years old</li></ul>	O POSITIVE
	Neonate <4 months of age	O NEGATIVE (≤ 7 days old, ≤ 3 days irradiated, Hgb S negative)

#### **Plasma**

Universal Group AB Donor Plasma should be provided during bleeding emergencies
when the issue of ABO identical or compatible plasma will cause delay – refer to <u>Table 2</u>

TABLE 2: Selection of PLASMA Components for Bleeding Emergencies

	Plasma Compatibility Table				
Recipient Type	Plasma ABO				
	0	Α	В	AB	
0	✓	✓	✓	✓	
Α		<b>√</b>		✓	
В			✓	✓	
AB				✓	

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	unknown ABO, NTD,			
	or patient <4 months of age		•	

#### **Platelet**

- The stock platelet unit available at NW campus can be provided to any patient regardless of ABO/ Rh, sex or age during a bleeding emergency
- Platelets stocked at NW campus will meet the following requirements except in the event of inventory shortage
  - PAS- Platelet collected in platelet additive solution

√ = compatibility between patient ABO and plasma ABO

 Non- PAS platelets may be provided when PAS platelets are unavailable such as in a platelet shortage crisis and include apheresis platelet collected in plasma and pre-pooled platelets

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Leukocyte-reduced considered CMV safe

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Irradiated and/or Pathogen Reduced

## Cryoprecipitate

- Cryoprecipitate may be given to adults without regard to ABO/Rh
- Infants <4 months of age should be issued type AB cryoprecipitate</li>

## **Order for Blood Components during Bleed Emergency**

- An electronic order (EPIC) or manual requisition for blood components should be received prior to components being released for transfusion.
- Blood components for MTP and bleeding emergencies may be prepared based on phone/verbal requests
- Order for an Adult MTP Pack includes the following
  - o MTP Pack
    - 4 RBC
    - 4 plasma
  - Platelet and cryoprecipitate are prepared upon request by the provider
- Order for a Neonatal Bledding Emergency includes the following
  - Neonatal Bleeding Emergency
    - 1 O negative RBC (≤ 7 days old, ≤ 3 days irradiated, Hgb S neg)
    - In the absence of a freshly irradiated O neg RBC that is <7 days old, any O negative RBC from the Haemobank can be selected and issued for transfusion
    - In the absence of a Hgb S negative unit, an untested unit can be issued for transfusion
    - Notify TM physican on call immediately after releasing the RBC
  - o 1 AB plasma
  - Platelet and cryoprecipitate are prepared upon request by the provider

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## **Blood Product Pickup**

- Person picking up the blood components must provide:
  - o Patient's MRN
  - o Patients full name
- Patient's name and MRN must be verified to match the order upon release to provider or care area
- The patient label or pick-up slip presented by the person running the components must be maintained at the transfusion medicine bench

## **SPECIMEN REQUIREMENTS:**

Every attempt should be made to collect an EDTA specimen (6 ml) for Type and Screen from the patient prior to blood administration. If the patient has no ABO/Rh history from Montlake TSL in Sunquest, an ABO/Rh sample should also be collected

### REAGENTS/SUPPLIES/EQUIPMENT:

Reagents:	Supplies:	Equipment:
NA	<ul> <li>Emergency Release         Transfusion Records</li> <li>Emergency Release of         Uncrossmatched Blood         Form</li> <li>Helmer plasma overwrap bags</li> <li>HemoTemp Stickers</li> </ul>	<ul> <li>BB LIS</li> <li>Helmer Plasma Thawer</li> <li>Blood product transport cooler</li> <li>Ice packs</li> <li>NIST thermometer</li> </ul>

## **QUALITY CONTROL:**

NA

## **INSTRUCTIONS:**

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**APPENDIX 1: Select of Uncrossmatched RBCs from the HaemoBank** 

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## **Massive Transfusion Protocol Initiation**

IVIASSIV	sive Transfusion Protocol Initiation				
Step	Action				
	Order placed	Then			
	EPIC or manual requisition	Obtain the possible	name of the MTP facilitator information when		
1	Phone or in person	patient Service Pat Pat Pat Ask Ask Fac Can Perform Order Give fa request When can is not m	<ul> <li>Obtain the following information from the MTP facilitator/ patient care provider and document on a Transfusion Services Test &amp; Blood Product Request Form         <ul> <li>Patient name</li> <li>Patient MRN</li> <li>Location of the patient including room number</li> <li>Ordering physician</li> <li>Ask whether cryoprecipitate or platelets are needed</li> <li>Facilitator name and direct phone number where he/she can be reached</li> </ul> </li> <li>Perform a verbal read-back with the person placing the order</li> <li>Give facilitator TAT of when products will be available and request that a runner be sent for product</li> </ul>		
2	<ul><li>the following information</li><li>Age</li><li>Sex</li><li>ABO/Rh -test res</li></ul>	ition: sult must be R available f or	quiry (BBI and enter the patient MRN to obtain  from Montlake TSL or crossmatching		
	If		Then		
	No clinically significant antibodies		Go to the next step		
	alloantibodies e n		Notify the patient's provider to determine if emergency release can be delayed until antigen negative units can be provided.		
3	Log into SmartTerm to generate patient demographic labels  • Function: BAR  • Which medical center (H or U): U  • Select Labels and Forms  • Select Barcodes  • Select TSS Patient Demographic Label				

Step	Action			
	Enter Valid Printer: #3 NWH Trans Med			
	Enter MRN#: Scan or manually enter Patient's MRN			
	<ul> <li>Is this correct? Confirm the patient's name enter [Y/N]</li> </ul>			
	Number of labels: Enter the desired number of labels (minimum of 30 labels)			
	<b>NOTE</b> : If BAR labels are unable to be generated on neonates,tags for universal products may be completed by hand-writing all pertinent information			
4	Go to section Selecting Uncrossmatched RBCs from HaemoBank			

Selecting Uncrossmatched RBCs from HaemoBank

00.00	ting Uncrossmatched RBCs from HaemoBank				
Step	Action				
1	Log in to the HaemoBank by scanning your UWMC ID Badge or entering in your EID#				
2	Touch <touch her<="" th=""><th>re for emerger</th><th>ncy units&gt;</th><th></th><th></th></touch>	re for emerger	ncy units>		
3	Touch <red cells<="" th=""><th>&gt;</th><th></th><th></th><th></th></red>	>			
4	Enter Patient's MF	RN and touch	<search></search>		
	Verify the correct I	MRN is display	yed when p	rompted to answer, "Correct patie	nt?"
	If		Then		
5	Correct		Select "Ye	es"	
	Incorrect		Select "No	o" and go back to step 4	
	Patient Rh Known	Inan			
	Patient Rh			Then	
				Touch [Don't Know] button	
	YES Rh Negat		•	NOTE: Touching the "Don't Know dispense O negative RBCs	w" button will
6		Rh Positive		Select based on Patient Age &	Gender
		Patient Age Gender		Then touch button	For
	NO	Females < 5 old	i0 years	[Female Younger than 50]	O Negative
		Females ≥ 5 old	0 years	[Female Older than 50]	O Positive
		Males <15 y	ears old	[Male Younger than 15]	O Negative

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Step	Action				
	Males ≥ 15 years old [Male Older than 15] O Positive				
		Unknown	[Don't Know]	O Negative	
			he designated neonate RBC ( the backup blood bank refrige		
7		• ,	spense based on quantity of Finding		
8	Remove the RB	C from the blue illuminated	tray		
9	_		product matches what was ex	pected and an	
		ergency Use Blood' label p	rinted successfully		
10	<ul> <li>If Then</li> <li>Successful</li> <li>Adhere the Emergency Use Blood Label to the Transfusion Record rubber banded to the RBC</li> <li>Go to next step</li> </ul>				
	Unsuccessful	• Touch <no> to print a</no>			
11	Apply the following stickers to each RBC unit:  • "Uncrossmatched" sticker  • Activated HemoTemp sticker				
12	Document the following an <i>Emergency Release of Uncrossmatched Blood</i> form  Patient Name & MRN (may use Patient Demographic Label)  Unit Number and division (if applicable) for each RBC. DIN stickers should be used whenever available.				
13	Photocopy the E	mergency Release of Unc	rossmatched Blood form to m	aintain in lab	
14	Document the following on a Downtime <i>Issue Log</i> Patient Name (may use Patient Demographic Label patient name and MRN)  Patient MRN  Patient Location  Unit Number and division (when applicable)  Unit E code				
	<b>NOTE:</b> Patient ID may be document for one blood component and filled in for the others after issue				
15	Call facilitator to	notify RBCs are ready for	pickup if a runner is not alread	dy present	

Step	Action
16	Go to section Issuing Emergency Blood

Prepar	ing Emergency Plasma and	l Cryoprecipitate	
Step	Action		
	NOTE: Thaw plasma prior to	ma or cryoprecipitate ordered cryoprecipitate if space is limited in the plasma thawer.  Then	
1	No ABO/Rh on file	<ul> <li>Select AB plasma</li> <li>Thaw and relabel plasma and/or cryoprecipitate according to SOP Ordering and Processing Plasma and Cryoprecipitate at Northwest Campus</li> <li>Go to next step</li> <li>NOTE: Only AB plasma maybe issued using the Downtime Issue Log except when LIS is out of service</li> </ul>	
	ABO/Rh is on file and time allows for electronic allocation by Montlake TSL	<ul> <li>Select type specific or ABO compatible plasma</li> <li>Thaw, relabel, and allocate plasma/cryoprecipitate according to SOP Ordering and Processing Plasma and Cryoprecipitate at Northwest Campus</li> <li>Issue allocated plasma/cryoprecipitate according to SOP Issuing Blood Components at Northwest Campus</li> </ul>	
2	<ul> <li>Log into SQ location: NV</li> <li>Open Blood Product En</li> <li>Click on 'Print Blank Ur</li> <li>Scan unit # and Ecode</li> <li>Click "OK"</li> </ul>		
3	Attached a patient demographic label (generated in SmarTerm) to the top portion of the Transfusion Record(s)		
4	Document the following on a <i>Downtime Issue Log</i> Patient Name (may use Patient Demographic Label patient name and MRN)  • Patient MRN  • Patient Location  • Unit Number and division (when applicable)  • Unit E code		

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Step	Action
	<b>NOTE:</b> Patient ID may be document for one blood component and filled in for the others after issue
5	Notify the facilitator the plasma and/or cryoprecipitate are ready for pickup if a runner is not already present
6	Go to section <u>Issuing Emergency Blood</u>

**Preparing Emergency Platelets** 

Tiopai	ing Emergency Platelets		
Step	Action		
1	Select any available platelet from the platelet shaker		
2	<ul> <li>Print a "blank" transfusion record for the platelet unit</li> <li>Log into SQ location: NW</li> <li>Open Blood Product Entry</li> <li>Click on Print Blank Unit Tag in the bottom left-hand corner of the screen</li> <li>Scan unit # and Ecode</li> <li>Click "OK"</li> <li>Click "OK" when message shows up "A unit tag request had been generated for unit# and Ecode</li> </ul>		
3	Attached a patient demographic label (generated in SmarTerm) to the top portion of the Transfusion Record(s)		
4	Document the following on a <i>Downtime Issue Log</i> Patient Name (may use Patient Demographic Label patient name and MRN)  Patient MRN  Patient Location  Unit Number and division (when applicable)  Unit E code  NOTE: Patient ID may be document for one blood component and filled in for the others after issue		
5	Notify the facilitator platelets are ready for pickup if a runner is not already present		
6	Go to Section: <u>Issuing Emergency Blood</u>		

**Issuing Emergency Blood** 

Step	Action		
1	If issuing	Then	
	Uncrossmatched or Universal Donor components not	Go to next step	

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Step	Action		
	unallocated to the patie	nt in	
	Crossmatched RBC or plasma, cryoprecipitate platelets allocated to the patient in Sunquest		
2	Perform and document the visual inspection of each product on the <i>Downtime Issue Log</i> refer to SOP <i>Visual Inspection of Blood Components at Northwest Campus</i>		
	If issuing	Then	
	At room temp	Go to next step	
3	In a cooler	Pack RBCs and thawed plasma in Blood Transport Coolers according to SOP Issuing Blood Components in a Blood Cooler at Northwest Campus	
4	<ul> <li>Perform read-back of patient name and MRN with person (runner) picking up the blood components.</li> <li>The runner will read out aloud and then spell the patient's full name from the pick-up slip or patient label brought by the runner while the tech compares to the product order and downtime log.</li> <li>The tech will read back and then spell the patient's full name and read MRN from the downtime log while the runner compares to the patient label or pick-up slip.</li> <li>NOTE: For the neonate RBC unit the following information requires read-back in addition to the patient's name and MRN: <ul> <li>a. Unit component- RBC, irradiated</li> <li>b. Donor Unit#</li> <li>c. Unit ABO/Rh</li> <li>d. Blood Product expiration</li> </ul> </li> </ul>		
	If runner presents	Then	
5	Pick-Up slip	Attach the Pick-Up slip to the component requisition	
	Patient Label	Adhere the label to the Downtime Issue Log or a blank Pick- Up slip.	
6	To expedite the issuing of emergency blood products, document the following on the Downtime Issue Log and fax to UW TSL:  Time of issue Issued by (issuing tech ID) Issued To (Name or initials of runner and cooler # if issuing in a cooler)  NOTE: If all components listed on the Downtime Issue Log are issued at the same time, it is acceptable to document the above information for one product and give the components to the runner to take before documenting the information for rest of the components.		

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Step	Action		
	<b>NOTE:</b> It is not acceptable to draw lines through columns to indicating the information is the same. Each field must be complete.		
7	<ul> <li>Send original Emergency Release of Uncrossmatched Blood form with runner for the physician to sign.</li> <li>Maintain the copy with the request for blood products and Downtime Issue Log.</li> </ul>		
8	Call ML TSL and notify them of the following:  MTP/OB activation and if patient has a history of antibodies  Downtime Issue Log is being faxed to Montlake TSL		
	Fax the completed <i>Downtime Issue Log</i> to Montlake TSL. TSL will enter documentation into Sunquest		

## CALCULATIONS/INTERPRETATIONS/RESULTS REPORTING/NORMAL VALUES/CRITICAL VALUES:

The ordering physician and the TSL MD must be notified immediately of any incompatible crossmatches detected following release of uncrossmatched blood

### **CALIBRATION:**

NA

## **NOTES AND LIMITATIONS:**

- Irradiated components are not required due to the emergency release but are stocked for convenience due to the high percentage of patients with Irradiation requirements
- The "BAR" function in SmarTerm can be used to print patient demographic labels for use on the *Transfusion Record* and the *Emergency Release of Uncrossmatched Blood Form*
- All required pretransfusion testing should be completed as soon as possible upon sample receipt

## **REFERENCES:**

- Standards for Blood Banks and Transfusion Services, AABB Press, Bethesda, MD. Current Edition.
- Technical Manual, AABB Press, Bethesda, MD. Current Edition.

## **RELATED DOCUMENTS:**

FORM Emergency Release of Uncrossmatched Blood UH3934

FORM Transfusion Record UH3363 (Sunguest)

FORM *Transfusion Record* UH3919 (HaemoBank)

FORM Downtime Issue Log

SOP Issuing Blood Components at Northwest Campus

SOP Ordering and Processing Plasma and Cryoprecipitate at Northwest Campus

SOP Issuing Blood Components in a Blood Cooler at Northwest Campus

SOP Returning Issued Blood Components to Inventory at Northwest SOP

SOP Quarantine and Final Disposition of Blood Components at Northwest Campus

SOP Visual Inspection of Blood Components at Northwest Campus

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UWMC SOP Approval:			
UWMC CLIA Medical Director			
	Andrew Bryan, MD	Date	
Transfusion Service Manager		Date	
	Nina Sen		
QA Manager		Date	
Transfusion Service	Tayler Reeves		
<b>Medical Director</b>		Date	
	Monica Pagano, MD		
<b>UWMC</b> Biennial R	eview:		
		Date	
		Date	

## **REVISION HISTORY:**

03/20/2021: Revised to add instructions for selecting Rh negative RBCs for patients know to be Rh negative. Removed and moved section for returning products to SOP Returning Issued Blood Components to Inventory at Northwest Campus. Minor changes for EPIC implementation. 05/17/2021: Added instruction for obtaining signed MTP order for verbally activated protocol. 03/4/2021: Revised to allow uncrossmatched blood to issue during initial MTP response. 07/20/2022: Revised for neonate bleeding emergency release; added O negative RBC ( $\leq$  7 days old,  $\leq$  3 days irradiated, Hgb S) policy

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## **APPENDICES:**

**APPENDIX 1: Selection of Uncrossmatched RBCs from the HaemoBank** 

Patient Rh Known	Then		
	Patient Rh	Then	
YES	Rh Negative	Touch [Don't Know] button  NOTE: Touching the "Don't Know" button will dispense O negative RBCs	
	Rh Positive	Select based on Patient Age & Gender	
	Patient Age & Gender	Then touch button	For
	Females < 50 years old	[Female Younger than 50]	O Negative
NO	Females ≥ 50 years old	[Female Older than 50]	O Positive
	Males <15 years old	[Male Younger than 15]	O Negative
	Males ≥ 15 years old	[Male Older than 15]	O Positive
	Unknown	[Don't Know]	O Negative

Copy of appendix attached to HaemoBank