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
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Number: PC-0081.01

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
- Notify the TSL Medical Director On-Call upon
  - Activation of an MTP or OB bleed
  - Release of uncrossmatched RBCs to patients with antibodies

### **Red Blood Cell Components**

- UNCROSSMATCHED Group O universal donor RBC components should be provided when
  pretransfusion testing is not complete and/or there is not time to crossmatch RBCs refer to
  Table 1
  - o Rh type is selected based on patient's sex and age refer to Table 1
  - Both O positive and O negative RBC are available in the HaemoBank for issue as uncrossmatched in bleeding emergencies
  - RBC components already crossmatch in the HaemoBank for the patient should be issued first.
  - If the patient has a current type and screen and patient qualifies for electronic crossmatch, crossmatched RBCs may be requested from UW TSL provided it does not cause delay issuing RBCs

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TABLE 1: Selection of UNCROSSMATCHED RBC Components for Bleeding Emergencies

Patient Age and Gender	RBC ABORh
<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

#### 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 Table 2

**TABLE 2: Selection of PLASMA Components for Bleeding Emergencies** 

Plasma Compatibility Table				
Desinient Type		Plasm	a ABO	
Recipient Type -	0	Α	В	AB
0	✓	✓	✓	✓
Α		✓		✓
В			✓	✓
AB				✓
unknown ABO, NTD, or patient <4 months of age				~

<sup>√ =</sup> compatibility between patient ABO and plasma ABO

### **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
  - o PAS- Platelet collected in platelet additive solution
    - 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
  - Leukocyte-reduced considered CMV safe
  - Irradiated and/or Pathogen Reduced

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### Cryoprecipitate

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

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

- An electronic order (CPOE) or manual requisition for blood components must be received prior to components being released for transfusion.
- Blood components for MTP and bleeding emergencies may be prepare based on phone/verbal requests.

### **Blood Product Pickup**

- Person picking up the blood components must provide:
  - o Patient's MRN
  - 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

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### **INSTRUCTIONS:**

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**Selecting Uncrossmatched RBCs from HaemoBank** 

**Preparing Emergency Plasma and Cryoprecipitate** 

**Preparing Emergency Platelets** 

**Issuing Emergency Blood** 

**Returning Issued Emergency Release Blood Component to Inventory** 

Massiv	ssive Transfusion Protocol Initiation		
Step	Action		
	Order placed	Then	
	CPOE or manual requisition	Obtain the name of the MTP facilitator information when possible	
1	Phone or in person	<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</li> <li>Patient name</li> <li>Patient MRN</li> <li>Location of the patient including room number</li> <li>Ordering physician</li> <li>Blood products needed</li> <li>Facilitator name and direct phone number where he/she can be reached</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	Open Sunquest, Blood Bank Inquiry (BBI the following information:  Age Sex ABO/Rh -test result must be from Montlake TSL Is a current TSCR available for crossmatching Antibody history or Required transfusion attributes  If Then		
	No clinically significantibodies	Go to the next step	
	History of clinically alloantibodies	significant  Notify the patient's provider to determine if emergency release can be delayed until antigen negative units can be provided.	

Step	Action			
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  • Enter Valid Printer: #3 NWH Blood Gas  • Enter MRN#: Scan or manually enter Patient's MRN  • Is this correct? Confirm the patient's name enter [Y/N]  • Number of labels: Enter the desired number of labels (minimum of 20 labels)			
4	Go to section Selecting Uncrossmatched RBCs from HaemoBank			

**Selecting Uncrossmatched RBCs from HaemoBank** 

Step		Action
1	Log in to the HaemoBank by sca	anning your UWMC ID Badge or entering in your EID#
2	Touch <touch emerger<="" for="" here="" th=""><th>ncy units&gt;</th></touch>	ncy units>
3	Touch <red cells=""></red>	
4	Enter Patient's MRN and touch	<search></search>
	Verify the correct MRN is display	yed when prompted to answer, "Correct patient?"
_	If	Then
5	Correct	Select "Yes"
	Incorrect	Select "No" and go back to step 4
6	Touch the correct age/gender button for the patient from the following options  o Male Older than 15  o Male Younger than 15 (males ≤15 years of age)  o Female Older than 50  o Female Younger than 50 (females ≤50 years of age)  o Don't Know	
7	Enter the number of emergency units to dispense based on RBCs requested	
8	Remove the RBC from the blue illuminated tray	
	Scan the unit number	
9	NOTE: A green check indicates Emergency Use Blood label will	the blood product matches what was expected and an print
10	Confirm the 'Emergency Use Blo	ood' label printed successfully

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Step	Action		
	If	Then	
	Successful	<ul> <li>Touch <yes></yes></li> <li>Place the Emergency Use Blood label on a blank Transfusion Record</li> <li>Go to next step</li> </ul>	
	Unsuccessful	Touch <no> to print a new label</no>	
11	Apply an "Uncrossmatched" sticker and an activated HemoTemp sticker to each RBC unit		
12	Document the following an Emergency Release of Uncrossmatched Blood form  Patient Name (may use Patient Demographic Label for this and MRN)  Patient MRN  Unit Number and division (if applicable) for each RBC		
13	Photocopy the Emergency Release of Uncrossmatched Blood form		
14	Call facilitator to notify RBCs are ready for pickup if a runner is not already present		
15	Go to section <u>Issuing Emergency Blood</u>		

**Preparing Emergency Plasma and Cryoprecipitate** 

Step	Action	
	freezer.	mber of frozen <b>AB plasma</b> and cryoprecipitate units from the BB ity should be given to plasma over cryoprecipitate if space is thawer.
	If	Then
1	No ABO/Rh on file and/or time does not allow for electronic allocation by Montlake TSL	<ul> <li>Select AB plasma</li> <li>Thaw and relabel plasma and/or cryoprecipitate according 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 (exception: 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 SOP Ordering and Processing Plasma and Cryoprecipitate at Northwest Campus         <ul> <li>Issue allocated plasma/cryoprecipitate according to SOP Issuing Blood Components at Northwest Campus</li> </ul> </li> </ul>

Step	Action
2	<ul> <li>Print a "blank" Sunquest Transfusion Record for each component</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 the message "A unit tag request had been generated for unit# and Ecode' appeared</li> </ul>
3	Attached a patient demographic label (generated in SmarTerm) to the top portion of the Transfusion Record(s)
4	Notify the facilitator the plasma and/or cryoprecipitate are ready for pickup if a runner is not already present
5	Go to section <u>Issuing Emergency Blood</u>

**Preparing Emergency Platelets** 

•	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	Notify the facilitator platelets are ready for pickup if a runner is not already present
5	Go to Section: <u>Issuing Emergency Blood</u>

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**Issuing Emergency Blood** 

ISSUIII	Emergency Blood		
Step	Action		
	If issuing	Then	
1	Uncrossmatched or Unive Donor components not unallocated to the patient Sunquest	Go to payt step	
	Crossmatched RBC or plasma, cryoprecipitate ar platelets allocated to the patient in Sunquest	Go to and follow SOP <i>Issuing Blood Components</i> at <i>Northwest Campus</i> for issue instruction	
2	Obtain a <i>Downtime Issue Log</i> and document the following for each blood component  Patient Name (may use Patient Demographic Label for this and MRN)  Patient MRN  Patient Location  Unit Number and division (when applicable)  Unit E code		
3		visual inspection of each product on the <i>Downtime Issue Log</i>	
4	Perform read-back of patient name and MRN with person (runner) picking up the blood components.  • The runner will read out loud and then spell the patient's full name from the patient label or pick-up slip while the tech compares to the transfusion record or <i>Emergency Release of Uncrossmatched Blood</i> form  • The tech will read out loud and then spell the patient's full name and read MRN from the transfusion record or <i>Emergency Release of Uncrossmatched Blood</i> form while the runner compares to the patient label or pick-up slip		
	If runner presents T	hen	
5	Pick-Up slip A	ach the Pick-Up slip to the component requisition	
	Patient Label A	dhere the label to the Downtime Issue Log	
6	Document the following on the Downtime Issue Log  Time of issue Issued by (issuing tech ID) Issued to (signature/initials of runner)		
7	Pack RBCs and thawed plasma in Blood Transport Coolers according to SOP <i>Issuing</i> Blood Components in a Blood Cooler at Northwest Campus		
8	<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>		
9	Call UWMC TSL to notify:  TSL Medical Director On-Call of the MTP/OB activation and release of uncrossmatched RBCs to patients with antibodies  Montlake TSL of the downtime issue		

	Step	Action	
10 Fax Downtime Issue Log to Montlake		Fax Downtime Issue Log to Montlake TSL to complete SQ documentation	

**Returning Issued Emergency Release Blood Component to Inventory** 

Returning Issued Emergency Release Blood Component to Inventory					
Step	Action				
1	<ul> <li>Go to Sunquest Blood</li> <li>Verify the blood composit</li> <li>If</li> <li>Issued in Sunquest</li> </ul>	Bank Inquiry (BBI)  nent are allocated and issued i  Then  Go to SOP Returning Issued Inventory at Northwest Can	d Blood Components to		
	Not issued in Sunquest	Go to next step			
2	Document the time of return				
2	If Returned in a cooler within 4 hours of issue	Then  If temperature reading of HemoTemp is  1-6 °C and the flower is NOT black	<ul> <li>Then</li> <li>Go to next step 4</li> <li>Place a Quarantine Sticker on the component</li> <li>Document the following on the Downtime Issue Log</li> </ul>		
3	Returned in a cooler >4	7-9°C or the flower is black  Go to SOP <b>Quarantine and I</b>	<u>-</u>		
	hours after issue	Components at Northwest Campus and quarantine components			
	No HemoTemp attached or not issued in a cooler	Verify the temperature of the blood component using a NIST calibrated thermometer, folding the component around the thermometer and reading after 3-5 minutes refer to SOP <i>Fluke Thermometer Operation</i>			

Step	Action				
	Document the temperature reading on a QI form				
	If component is	Then			
		Go to next step	Go to next step		
	Within acceptable temperature range	Component Type	Acceptable Temperature Range		
4		RBC or Plasma	1-10 °C		
7		Platelets, cryoprecipitate	20-24 °C		
	Outside of acceptable temperature range	<ul> <li>Place a Quarantine Sticker on the component</li> <li>Document the following on the <i>Downtime Issue Log</i> <ul> <li>"NO" in the 'Pass Visual Inspect' field</li> <li>Tech ID in the 'Return by' field</li> </ul> </li> <li>Go to step 11</li> </ul>			
	Perform visual inspection following SOP Visual Inspection of Blood Components at Northwest Campus				
	If	Then			
5	Acceptable	•	<ul> <li>Component is acceptable to return to inventory</li> <li>Go to next step</li> </ul>		
	Unacceptable	<ul><li>Document the</li><li>"NO" in</li><li>Tech ID</li></ul>	Document the following on the <i>Downtime Issue Log</i> "NO" in the 'Pass Visual Inspect' field		
7	Document the following on the <i>Downtime Issue Log</i> ■ "✓" in the 'Pass Visual Inspect' field				
8	<ul> <li>Tech ID in the 'Return by' field</li> <li>Place components in the appropriate storage area. Refrigerated component can go in the backup refrigerator</li> </ul>				
9	Fax Downtime Issue Log to Montlake TSL to complete SQ documentation				
			ed Blood form is signed by the provider		
	If	Then			
10	Signed		atology Lead and/or supervisor		
10	Unsigned	assist in obtainin	tology Lead and/or supervisor to g ordering physician's signature. atology Lead and/or supervisor		
11	<ul> <li>Place components in the appropriate quarantine storage area until issued in Sunquest</li> <li>Go to SOP Quarantine and Final Disposition of Blood Components at Northwest Campus once components are issued in SQ</li> </ul>				

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### 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 Records 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

### **APPENDICES:**

NA

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UWMC SOP Approval:		
CLIA Medical Director	Mark lokan	Date 10/20/20
Transfusion Service	Mark H. Wener, MD	. 1 /
Manager	Nina Sen	Date 10/20/20
Transfusion Service Compliance Analyst	Planton Clark	Date 10 20 2020
	Christine Clark	Date 10 20 2020
Transfusion Service Medical Director	Ohighy	Date 10-20-2020
	Monica B. Pagano, MD	•
UWMC Biennial Review:		
	·	Date
		Date