

TRAINING UPDATE

Lab Location: SGMC and WOMC **Date Implemented:** 7/10/20
Department: Blood Bank **Due Date:** 7/31/20

DESCRIPTION OF PROCEDURE REVISION

Name of procedure:

Massive Transfusion Protocol

Description of change(s):

Please read both the blood bank and AHC procedures that are attached.

1. A blood bank liaison will be assigned for every massive transfusion protocol activation. The purpose of the blood bank liaison is to give blood bank staff one person with whom to communicate. We are trying to avoid situations where multiple people call the blood bank to ask the same questions over and over as this ties blood bank staff to the phone and prevents delays them from preparing products.
2. When an MTP is called, blood bank will automatically issues all red cells that are ready for the patient. If none are crossmatched, we will issue at least 4 red cells in the initial cooler.

Blood bank staff will also release any thawed plasma and reallocate it to the MTP patient if compatible. All available thawed plasma should be placed in the initial cooler.

3. Subsequent coolers will include 6 red cells and 6 plasma units.
4. We will also add a platelet when we issue every other cooler (coolers 2, 4, 6, etc).
5. We will include a blue, sodium citrate tube and fibrinogen order when we issue every other cooler (coolers, 2, 4, 6, etc). Blood bank staff will order the fibrinogen and communicate with the coag tech.
 - a. BB is responsible for reminding the blood bank liaison about the fibrinogen collection if not received within 30 minutes.
 - b. BB will automatically thaw and issue 10 units of cryo if the fibrinogen is less than 150 mg/dL.

Non-Technical SOP

Title	Massive Transfusion Protocol	
Prepared by	Stephanie Codina	Date: 12/8/2010
Owner	Stephanie Codina	Date: 12/8/2010

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

Review:		
Print Name	Signature	Date

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 4
7. REFERENCES 4
8. REVISION HISTORY..... 4
9. ADDENDA AND APPENDICES 5

1. PURPOSE

The Massive Transfusion Protocol (MTP) defines the processes that will coordinate efficient ordering, procurement, and transfusion of blood products in a timely manner for massively bleeding patients.

2. SCOPE

This procedure applies to any patient for whom a massive transfusion protocol is called.

3. RESPONSIBILITY

All blood bank staff members will prepare and issue blood products as specified in this procedure when a massive transfusion is requested.

4. DEFINITIONS

- A. Massive Transfusion is defined as any of the following:
 - a. Total blood volume is replaced within 24 hours
 - b. 50% of total blood volume is replaced within 3 hours
 - c. Active bleeding with blood loss of 150 ml/min or greater
- B. Physician-in-charge: The physician who is responsible for the care of a patient, usually the attending physician, surgeon, or anesthesiologist caring for the patient or the physician or licensed practitioner (LIP) who assumes care of the patient in an emergency situation.
- C. Massive Transfusion Protocol Alert: A declaration made by the physician-in-charge that a rapidly bleeding patient who requires massive transfusion exists.
- D. Transfusionist: The nurse or physician who prepares and hangs blood for infusion.

Form revised 3/31/00

5. PROCEDURE

Step	Action
1	The physician in charge will initiate the massive transfusion protocol alert and designate a reliable person to act as the blood bank liaison. The blood bank liaison will notify the blood bank via telephone that a massive transfusion protocol alert has been declared. The liaison will serve as the contact person for blood bank staff throughout the emergency.
2	Upon receipt of the verbal notification, obtain and document the following information on the Telephone Order Log. <ul style="list-style-type: none"> A. Date and time of request B. Patient's full name or alias, if available C. Patient's medical record number, if available D. Ordering physician's name E. Name and vocera/phone number of the blood bank liaison F. Note "MTP" on the log. Retroactive documentation is acceptable due to the urgency of the request.
3	Review the patient's blood bank history in the LIS to determine whether the patient needs a current T&S and/or ABO confirmation specimen. <ul style="list-style-type: none"> A. Instruct the caller to immediately collect and send a T&S or ABO confirmation specimen, if applicable. B. Notify the caller that emergency release blood products will be issued immediately, when the T&S specimen has not been received in the blood bank. C. Notify the caller group O red cells will be issued if the ABO confirmation has not been received. D. Remind the caller that they must send a runner to pick up blood products in the cooler and blood bank will require a "Request for Transfusion" or "Emergency Release" form each time blood products are issued.
4	Immediately prepare and issue the following blood products. Refer to the emergency release procedure as indicated. <ul style="list-style-type: none"> A. All red blood cells currently crossmatched to the patient <i>or</i> a minimum of four red cells if none are allocated B. Any plasma units that have been thawed and can be reallocated to the bleeding patient The blood products must be prepared in a transport cooler, and the patient care area will send a team member to pick up the blood products.
5	Continue to prepare coolers that contain the following products until the bleeding episode is over. Every additional cooler will contain: <ul style="list-style-type: none"> A. 6 red blood cells B. 6 thawed plasma

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Step	Action
	The following will also be issued with every other cooler (coolers 2, 4, 6, 8, etc): A. 1 apheresis platelet (do not issue in cooler) B. 1 blue (sodium citrate) tube for collection of fibrinogen; Blood bank will place the fibrinogen order in Sunquest
6	Blood bank staff will communicate with the staff member working in coagulation. A. Blood bank will contact the blood bank liaison if the fibrinogen has not been received within 30 minutes. B. Blood bank will automatically prepare and issue 10 units of cryoprecipitate if the fibrinogen level is less than 150 mg/dL.
7	The physician in charge will order additional blood products as needed.
8	Monitor the blood product inventory. Order additional blood products into inventory as needed.
9	All emergency release forms will be signed by the physician and returned to the blood bank within 48 hours of the massive transfusion activation.
10	A representative from the patient care area will return the blood product transport coolers and any unused blood products to the blood bank as soon as the patient is hemodynamically stable or the massive transfusion protocol is terminated.

6. RELATED DOCUMENTS

- SOP: Blood Bank Telephone Product Orders
- SOP: Issuing Blood in a 930 Medical Transport Cooler
- SOP: Issuing Blood Products in a Max+ Blood Shipper
- SOP: Emergency Release of Blood Products
- SOP: Issuing Blood Components
- AHC Policy: Massive Transfusion Policy (MTP)

7. REFERENCES

N/A

8. REVISION HISTORY

Version	Date	Reason for Revision	Revised By	Approved By
		Supersedes WAH/SGAH B309.000		
000	10.23.15	Section 5: Updated wording of step 3 for clarity Footer: Version # leading zero's dropped due to new EDCS in use as of 10/7/13	SCodina	NCacciabeve

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1	10.17.17	Header: Added WAH	LBarrett	NCacciabeve
	7.10.20	Added blood bank liason, fibrinogen testing/cryoprecipitate issues, and updated cooler contents per changes to AHC policy.	SCodina	NCacciabeve

9. ADDENDA AND APPENDICES

N/A



LABORATORY BLOOD BANK MANUAL

Massive Transfusion Protocol

Effective Date: 6/17

Review Date: See electronic review

Revision Date: 4/20

Policy No: 001-18-207

Authority: Transfusion Committee

Page 1 of 3

SUPPORTIVE DATA

Blood Product Administration 001-18-201

DEFINITIONS

Massive Transfusion is defined as any of the following:

- Total blood volume is replaced within 24 hours
- 50% of total blood volume is replaced within 3 hours
- Active bleeding with blood loss of 150 ml/min or greater

Physician in Charge—the physician who is responsible for the care of the patient or the physician who assumes care of the patient in an emergency.

Massive Transfusion Protocol (MTP) Alert—the declaration by the Physician in Charge that there is a rapidly bleeding patient, or a patient requiring a rapid transfusion of multiple blood products.

PRINCIPLE

1. All patients requiring >6 units of blood in a period of less than 24 hours need close monitoring and support.
2. Platelets and plasma are not replaced by red blood cell transfusions and may be necessary to augment loss from the bleeding.
3. Such patients or patients with onset of acute bleeding that may require significant transfusion in a short time are subject to the **Massive Transfusion Protocol**.

PURPOSE

1. To define the processes to coordinate the efficient ordering, procurement, and transfusion of blood and blood products and to ensure these are available in a manner to meet the needs of these patients.
2. This protocol is intended to be used as a guideline during massive transfusion.
3. The use of this protocol is at the discretion of the **Physician in Charge**.

RESPONSIBILITIES

Physician in Charge

1. Initiates a massive transfusion protocol alert.
2. Designates a reliable person as the "blood bank liaison."
3. Documents the MTP in the physician orders as soon as practical.
4. Signs all emergency release forms within 48 hours of bleeding episode.

Blood Bank Liaison

1. Notifies blood bank of the massive transfusion activation.
2. Serves as the blood bank contact person throughout the massive transfusion event.
3. Completes the "Request for Transfusion forms and arranges for pickup of blood products from the blood bank.

Blood Bank

1. Transcribes patient information provided during the alert.
2. Verifies patient transfusion requirements and T&S status.
3. Prepares blood products per protocol and packages them in a blood transport cooler for delivery to the patient care area.
4. Consults the Blood Bank Medical Director or a clinical pathologist as needed.

Transfusionist

1. Collects and submits specimens (T&S, ABO confirmation, etc) as requested by blood bank.
2. Administers blood products per hospital policy.



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Page 2 of 3

PROCESS

NOTE: It is understood that in some circumstances, the gravity and/or urgent nature of the situation may require the below guidelines to be streamlined. Blood bank does accept verbal orders when the patient's condition is urgent.

1. The physician in charge initiates the massive transfusion protocol alert and designates a reliable person as the blood bank liaison. It is advisable to activate the massive transfusion protocol as early as possible in the bleeding episode to allow adequate time for the provision of blood products.
2. The blood bank liaison will call the blood bank (**SGMC x6092** and **WOMC x5160**) to notify them that a massive transfusion activation has occurred. The following information must be provided:
 - a. Patient's full name
 - b. Patient's medical record number
 - c. Name of the physician activating the MTP
 - d. Patient location
 - e. Name of blood bank liaison and vocera/phone number for contact.
3. Blood bank staff will complete the following while on the phone with the blood bank liaison:
 - a. Document the information on the log.
 - b. Review the patient's blood bank history, transfusion requirements, and availability of allocated blood products.
 - c. Request a T&S specimen or ABO retype, if indicated.
 - d. Notify the blood bank liaison if an emergency release form is required. Note: blood will not be withheld if the emergency release form is not signed.
4. The blood bank liaison will facilitate the collection of the T&S or ABO confirmation specimen if requested.
5. The blood bank liaison will complete a "Request for Transfusion" or "Emergency Release" form and send someone to the blood bank to pick up the initial blood products.
6. Blood bank staff will package any available blood products in a cooler for immediate pickup. Blood bank staff will:
 - a. Check the availability of thawed plasma in the blood bank and reallocate thawed plasma from other patients if available.
 - b. Crossmatch 4 units of red cells (unless red cells are already available for issue)
 - c. Issue all available red cells and plasma in a cooler for pickup. Note: This will contain a minimum of 4 red cells. Additional red cells and plasma units will be issued at the same time, if available.
7. The transfusionist will administer blood products per hospital policy.
8. Blood bank will continue to prepare blood products, notify the blood bank liaison of availability, and issue the in coolers for the duration of the MTP activation.
9. When the patient care area sends a runner to pick up products, blood bank will issue all products available. The goal will be to issue the following:



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Page 3 of 3

	<ul style="list-style-type: none">a. Every cooler should contain:<ul style="list-style-type: none">i. 6 red blood cellsii. 6 thawed plasmab. Every other cooler (coolers 2, 4, 6, etc) should also contain:<ul style="list-style-type: none">i. 1 apheresis platelet (issued outside of the cooler)ii. 1 blue (sodium citrate) tube for collection of fibrinogen <p>10. The blood bank liaison will continue to facilitate the exchange of blood product coolers.</p> <ul style="list-style-type: none">a. A completed "Request for Transfusion" form is required with each blood product pickup. The patient name, medical record number, BB/TS number, requestor's signature, and time of request must be documented. All other fields can remain blank if "MTP" is written on the form.b. Coolers will be picked up as needed.c. Empty coolers should be returned to blood bank as quickly as possible to ensure availability when issuing additional products.d. The blood bank liaison will ensure the fibrinogen specimen is ordered and sent when the blood collection tube is issued. <p>11. Blood bank will call the patient care area if the fibrinogen tube is not returned to the lab within 30 minutes. One does of cryoprecipitate will automatically be prepared and issued if the fibrinogen falls below 150 mg/dl.</p> <p>12. The physician in charge will order additional blood products as needed.</p> <p>13. The blood bank liaison will notify blood bank when the patient bleeding has slowed and the massive transfusion protocol can be discontinued. Blood bank staff should inquire about the patient status if release of blood products has slowed and notification to discontinue the massive transfusion protocol has not been received.</p> <p>14. All emergency release forms will be signed and returned to the blood bank within 48 hours of the bleeding event.</p> <p>15. The blood bank liaison will ensure all unused blood products and blood product coolers are returned to the blood bank as soon as possible to avoid blood product wastage.</p>
REFERENCES	Fung, MK, Eder, AF, Spitalnik, SL, and Westhoff, CM. (2017). <i>Technical Manual of the AABB</i> , 19 th ed. AABB Publishing: Bethesda, Maryland.
APPROVAL	Blood Bank Medical Director, Transfusion Committee
DISTRIBUTION	All clinical areas that transfuse blood and blood products.