

Title:	Trauma: Emergency Administration of Blood Products – Massive Transfusion Activation (MTA) Protocol	Page 1 of 5
Policy No:	3 DRH MS 004	Effective Date: 06/27/2023

I. OBJECTIVE/PURPOSE

To ensure consistent provision of care for unstable trauma patients requiring emergent administration of uncrossmatched blood..

II. Scope

Trauma Team Members, Blood bank personnel, ED nursing, ED physician, other patient care providers within the scope of their practice.

III. DEFINITIONS

Trauma Cooler – a cooler is used to transport blood products for unstable trauma patients. It may contain uncrossmatched O negative or O positive blood products or components of the massive transfusion pack.

Emergency Transfusion Release Form – The form which authorizes the blood bank to release uncrossmatched blood. The form must be signed by the physician authorizing the use of uncrossmatched blood and return to the Blood Bank for record keeping.

Massive Transfusion Pack – A pre-defined package of blood and blood products obtained from the Blood Bank for unstable trauma patients who require more than 4 units of emergent uncrossmatched blood.

IV. PROCEDURE

1. This policy covers unstable trauma patient defined as those meeting criteria for level I trauma activation with systolic blood pressure of less than 90 mmHg and/or penetrating injury to the chest or abdomen.
2. A sufficient supply of emergency release uncrossmatched blood will be made immediately available to facilitate resuscitation of designated patients in the Emergency Department (ED) or Operating Room (OR).
3. The Blood Bank will provide 4 units of uncrossmatched O negative Red Blood Cells (RBC) and 2 units of Plasma in the trauma cooler. This blood will be provided as soon as the patients arrive in the ED. It may be provided before patient identification is available.
4. If additional blood is needed before pre-transfusion testing is complete, male patients and female over the age of 50 may receive uncrossmatched O positive RBC. When transfusing young females of child bearing age and children, every effort should be made to provide Rh negative blood products until type and specific blood is available.
5. A specimen for Type and Crossmatch must be provided to the Blood Bank STAT so that subsequent blood transfusions can be type specific.
6. Coagulations studies will be sent to lab upon arrival PTT, PT, INR, Platelet count and ionized calcium level.

V. Provisions

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1. The Blood Bank will have 4 units of O negative PRBC and 2 units of Plasma designated for Emergency Release and tagged in the refrigerator at all times. The attached Blood Administration form (bag tag) will indicate “Unknown Trauma Patient”. There will be no other patient identification information on the bag tag.
2. The unit numbers will be written on the blank Request for Emergency Release Uncrossmatched Blood form.
3. A segment from each unit will be pre-pulled and labeled for use in subsequent testing. The segments will be stored in the Blood Bank .
4. When the Blood Bank Technologist hears the “trauma Code 1 GSW to chest/abdomen” or “TC1 blood pressure less than 90 mmHg announcement on the trauma pager, he/she will have immediately begun to prepare the trauma cooler.
5. Four units of O negative PRBC, 2 units of Plasma tagged with a Blood Administration Form (bag tag) indicating “Unknown Trauma Patient” will have been placed in the Trauma Cooler, packed with appropriate coolants packs. The blank Request for Emergency Release Uncrossmatched form with the unit number listed will be included in the trauma cooler with blood.
6. The Emergency Department Communication Specialist will present in the Blood Bank and verbally request the Trauma Cooler. A Blood Release form is not required for the initial cooler.
7. The physician taking responsibility for requesting uncrossmatched blood must sign the request for Emergency Release Uncrossmatched Blood form. The form must be returned to the Blood Bank.
8. A specimen for Type and Crossmatch must be collected and sent to the Blood Bank STAT.

Massive Transfusion Protocol

1. If it is anticipated that more than 4 units of PRBC will be needed, the attending ED physician or Surgeon will be responsible for activating the Massive Transfusion Protocol by informing the Blood Bank and entering the “Massive Transfusion Protocol” order.
 - a. In the ED resuscitation bay, the scribe nurse or designee will be responsible for calling the Blood Bank
 - b. In the OR suite, the Anesthesiologist, CRNA, Circulating nurse or designee will be responsible for calling the Blood Bank.
2. A second cooler will immediately be provided with 4 units of PRBC (type and specific if available) and 4 units of plasma, plus 1 unit of platelets. Platelets are not placed in the cooler A blood release form is required to pick up the second and all subsequent coolers.

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3. When the Massive Transfusion Protocol is activated, the Blood Bank will continue to prepare coolers until the MTP is discontinued. The Blood Bank will notify the contact person when the second cooler is ready for pick up.
4. The third cooler will provide 6 units of PRBC, 6 units of plasma plus 1 pack of platelets
5. All subsequent coolers will contain the same assortment of blood products.
6. **Ionized Calcium, TEG functional fibrinogen (FF), PT/INR, PTT, and Platelet count will be performed after every 6 units of PRBC**
7. **Administration of Calcium Chloride is advised for every 5 unit of blood products if ionized calcium results are not available**
8. **Treatment with Cryoprecipitate if major bleeding is accompanied by hypofibrinogenemia. Patient with low plasma fibrinogen <150 g/L or low TEG FF level and on going bleeding with continued blood administration, a dose of 5-10 units of Cryoprecipitate (or equivalent amount of Fibrinogen) should be administered.**
9. The Trauma Coolers must be returned to the Blood bank when contents have been given.
10. Blood Bank will automatically continue to prepare coolers and notify the OR when they are available for pick up.
11. The Trauma Attending, Anesthesiologist, CRNA, or ED Physician will be responsible for terminating the massive transfusion protocol.

VI APPENDIX/ATTACHMENTS

- 1 . Massive transfusion protocol sequence
Massive Transfusion Protocol Sequence Table

GUIDING STATEMENTS

These guidelines can be modified and individualized upon the discretion of the ED Physician or Surgeon, or Anesthesia Team. (Can't modify and MTP cooler in the Blood Bank the process is automatic until called off).

Initial Transfusion Sequence

Cooler #1 = 4 units O negative PRBC uncrossmatched blood, 2 units of FFP plasma.

Draw labs: type and Cross, PT/INR, PTT, Platelet count, **ionized calcium level, TEG Functional Fibrinogen (FF)**

Complete Emergency Release Form and return to Blood Bank with empty Cooler #1

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Activate Massive Transfusion Protocol if more blood anticipated as designated by Attending ED Physician or Surgeon. Make a phone call to the Blood Bank “Massive Transfusion Protocol” in (ED resuscitation bay and/or OR suite) and enter Massive Transfusion Protocol and give contact information.

Massive Transfusion Guidelines (> 4 units PRBC)

1. Cooler # 2 = 4 units O positive or O Negative PRBC (type and specific if available), 4 units Plasma- type and specific if available 1 unit platelets, Draw Ionized Calcium, TEG FF, PT/INR, PTT, and platelet count after 6 units of **blood products have been transfused.**

After 6 units of PRBC transfused:

2. Cooler # 3 = 6 units PRBC (type and specific if available), 6 units Plasma. 1 unit Platelet
Cooler # 4 = same as above.
3. Draw: Ionized calcium, TEG FF, PT/INR, PTT and Platelet count after every 6 units of blood products have been transfused.
4. Cooler # 5 = same as above
5. Each subsequent cooler will contain 6 units of type and specific PRBC and 6 units Plasma and 1 unit platelets
6. Repeat: Ionized calcium, TEG FF PT/INR, PTT & Platelet Count - after every 6 units of blood products have been administered.
7. Additional Plasma, platelet transfusion and cryoprecipitate may be given based on TEG FF, PT/INR, PTT results.
8. The Trauma Attending Surgeon, Anesthesiologist, CRNA, or ED Physician will be responsible for terminating the massive transfusion protocol.
- 9.. Promptly return empty trauma coolers to the Blood bank.

VI. ADMINISTRATIVE RESPONSIBILITY

The **Chief Academic and Medical Officer, Chief Operating Officer, Regional Executive Nurse** has responsibility and authority for enforcement, interpretation of, or exception to this policy. **Site/Regional Director of XXX** has day to day responsibility for administration of this policy

APPROVAL SIGNATURE

Dr. Lawrence Diebel
 DRH Medical Trauma Director

 Date

 DRH Chief Nursing Officer

 Date

Email final policy in word document, pdf of signed copy and all attachments, including history and education form if applicable to policies@dmc.org. Send original signed copy, history form and Education form if applicable to Harper Hospital, 8 Brush Administration, Attn: Policies.

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Dr. _____
 DRH Chief Medical Officer

_____ Date

THIS POLICY: is/has been: (check X one) NEW X REVIEWED X REVISED*

CHANGES/REVISIONS: List Changes Here

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Supersedes	06/02/2020		Next Review Date	06/28/2026
Origination Date	09/09/2009	History - Review/Revision Dates	0/09/2009, 02/01/2011, 02/25/2014, 11/25/2017, 11/30/2018, 06/02/2020	
Related Tenet Policy (ies) #'s				
Name of Committee / Title of person(s) responsible for this policy's review and approval process				