

**BARNES-JEWISH HOSPITAL  
ORGANIZATIONAL POLICIES**

**TITLE:** Massive Transfusion Protocol (MTP)

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**Policy Statements**

- A. All patients in the South Campus Emergency Department, Operating Rooms and ICUs will have a steady and adequate supply of blood and products when required to control hemorrhage.
- B. If BJH Blood Bank has no prior history of patient ABO/RH, the Blood Bank will send a Check Sample tube. No type specific or crossmatched blood will be issued until a Check Sample is returned to Blood Bank and confirmation testing is completed.
- C. Blood product distribution will start with un-crossmatched type O red blood cells and type A thawed plasma and will progress to un-crossmatched type-specific as soon as possible and eventually to crossmatched type-specific.
- D. The Blood Bank attending physician shall communicate to the patient's attending physician if there is anticipated inability to complete the MTP.
- E. Transportation of blood and blood products will be the responsibility of a designated person from the receiving unit.

**Purpose**

- A. To provide adequate and efficient blood and products delivery for the resuscitation of a patient with active, and uncontrolled hemorrhage.

**Procedure**

- A. Activation of Massive Transfusion Protocol
  - 1. The decision to activate the MTP may be made by an Attending.. The decision to activate will be based on the presence of major trauma and/or massive hemorrhage with one or more of the following indicators:
    - a. Class IV shock and estimated requirements of at least 10 units of blood
    - b. BOTH substantial acute or imminent blood loss AND a likelihood that substantial blood loss will continue over short term and estimated requirements of at least 10 units of blood
  - 2. The Attending, or that person's designee will call Blood Bank personnel and give the order to activate the MTP. The caller will convey the following information:
    - a. Patient ID
    - b. Patient location and future location if known
    - c. Attending authorizing MTP
    - d. Caller's name
- B. Initial Product Release
  - 1. If MTP is activated, one full pink-top labeled tubes of blood will be sent to Blood Bank by a designated person for immediate Type and Screen. The designated person will bring a Transfusion Authorization Form (TAF) to the Blood Bank, with "MTP" noted on it or the Blood Bank will provide one. This form will have patient identifiers noted either via sticker or handwritten.
  - 2. If the patient is to remain in same patient care area to receive blood products, the designated person will wait at the Blood Bank to pick up Cycle 1.

3. If the patient will move to another patient care area, the attending will notify the receiving area that the MTP has been activated, and the receiving area will send their designated transporter to Blood Bank to pick up Cycle 1. The attending will also notify the Blood Bank personnel of the patient move.
  4. Cycle 1 shall include the following (*Cycle definition: 2 boxes and 1 bag*):
    - a. 10 units packed red blood cells
    - b. 6 units fresh frozen plasma
    - c. 1 unit platelets
  5. If Cycle 1 is incomplete after 15 minutes have elapsed since activation call, the designated person may take an incomplete cycle at the discretion of the Blood Bank personnel.
  6. Cycle 1 will be completed by Blood Bank personnel within 30 minutes of activation for transport to patient care unit.
  7. When Blood Bank issues cycle 1, the Blood Bank will provide a "Waiver for Emergency Release of Blood Components" form which must be signed by the physician (or delegate) activating MTP. The completed form must be returned to the Blood Bank as soon as possible when cycle 2 is picked up or when cycle 1 is returned via the pneumatic tube system or hand delivered by a BJH staff member.
  8. One "Waiver for Emergency Release of Blood Components" form is required per MTP activation. A new waiver form will be required for each new MTP activation.
  9. The transfusionist should remove the "Emergency Blood Special Release" tags attached to any products that are transfused, complete all the information fields and place in the patient's medical record.
- C. Continuation of Massive Transfusion Protocol
1. Blood Bank charge tech will call patient care area to notify them when each cycle is complete, and will state "We are preparing Cycle #\_\_\_. Do you want to continue the MTP (default is "yes")?"
  2. If yes, Blood Bank personnel will continue to prepare cycles at least every 30 minutes until protocol is discontinued.
  3. Cycle 2 and all subsequent cycles shall include the following:
    - a. 6 units packed red blood cells
    - b. 6 units fresh frozen plasma
    - c. 1 unit platelets
  4. Repeat steps 1 through 3 of this section until order is given to discontinue protocol.
  5. From Cycle 2 on, in extraordinary circumstances all required products may not be complete in time. Blood Bank personnel will determine if the designated person should take that cycle or await completion.
  6. All units from previous cycles will be transfused prior to starting the next cycle.
  7. As the 3<sup>rd</sup> cycle is prepared the Blood Bank will notify the Laboratory Medicine Resident.
  8. Call the Lab medicine Resident if any questions or issues arise especially pertaining to Cytoprecipitate or Factor VII utilization as this person will assist with resolution.
- D. Patient Transfer
1. If MTP is active during a patient transfer, the blood products should be sent with patient.
  2. MTP continuation should be communicated in routine transfer hand-offs. The receiving area should be informed that the patient is on the MTP and which cycle he/she is currently receiving. They should also be informed of the time the next cycle will be available for pickup.
  3. If the patient is changing location after MTP cessation, products not already hanging should be returned to Blood Bank personnel.
  4. The attending physician is responsible for notifying the Blood Bank if the patient is transferring.
- E. Cessation of Massive Transfusion Protocol
1. The decision to cease the MTP may be made by the attending or attending anesthesiologist. Patient indicators for cessation of MTP include:
    - a. Expiration

- b. Hemodynamic stability
    - c. Attending or attending anesthesiologist's discretion
  2. The protocol may be discontinued by either:
    - a. Answering "no" to the MTP continuation inquiry from Blood Bank personnel after each cycle of products is prepared
    - b. Attending physician or designee calling Blood Bank personnel and giving order to discontinue protocol
- F. Return of Unused Blood Products After Cessation of Massive Transfusion Protocol
  1. When MTP is discontinued and the attending physician anticipates the product will not be given in the time frame of storage, unused products shall be returned to the Blood Bank .
  2. Returns are as follows:
    - a. If product is in the ICU, Blood Bank personnel will send a runner to pick up the product.
    - b. If product is in the OR, the designated person will either take the cycle back to the Blood Bank personnel or tube the product to Blood Bank personnel.
- G. Override of Massive Transfusion Protocol
  1. The physician who activates the MTP may, in rare cases, may override the protocol and request products more quickly than the time frame set forth in the protocol. It should be recognized that the Blood Bank personnel will do their best to meet these requests but may not be able to provide more than protocol amounts.
  2. The attending may also call the Blood bank to slow the rate of delivery of products, but stay on the protocol.
  3. In the event of an override, Blood Bank personnel may not be able to provide type-specific or crossmatched products. Blood Bank personnel have discretion to send un-crossmatched products if necessary.
  4. All protocol overrides are subject to PI review.
- H. Performance Improvement
  1. Data and information will be collected on all MTP activations, as specified below:
    - a. Real-time, collected by Blood Bank personnel:
      - i. Patient identifiers
      - ii. Physician activating and deactivating protocol
      - iii. Anecdotal
    - b. After MTP event, all other predetermined database information will be collected for entry into database. Required information shall be determined by PI team.
  2. MTP activations will be reviewed by Massive Transfusion Committee or the Transfusion Committee.

**Resources/References:**

Barnes-Jewish Hospital Trauma Registry.

Erlanger Health System, Trauma Surgical Critical Care Department. Massive Blood Resuscitation Protocol. 2007.

American Association of Blood Banks. Standards for Blood Banks and Transfusion Services. Current Edition.

**Approvals:** Massive Transfusion Committee, 2015