POLICY MANUAL - SECTION V: PROVISION OF CARE

SUBSECTION: 4. SPECIAL PROCEDURES

SUBJECT: MASSIVE TRANSFUSION PROTOCOL/EXSANGUINATION/EMERGENCY RELEASE OF BLOOD PRODUCTS

EFFECTIVE DATE: FEBRUARY 14, 2018  SUPERSEDES: NONE

APPROVALS: Final – President

<table>
<thead>
<tr>
<th>Concurrences</th>
<th>Vice President, Patient Care Services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vice President, Medical Affairs</td>
</tr>
<tr>
<td></td>
<td>Chief of Pathology</td>
</tr>
<tr>
<td></td>
<td>Chief Quality Officer</td>
</tr>
<tr>
<td></td>
<td>Laboratory Director</td>
</tr>
</tbody>
</table>

PURPOSE: The Massive Transfusion Protocol (MTP) for the hospital is intended for patients meeting the criteria requiring massive transfusion. The MTP is intended to provide patients efficient and effective procurement and delivery of blood products.

Eligible Patient Populations: adult patients, pregnant patients (less than 20 weeks)
Potentially Eligible Patient Populations: pediatric patients, pregnant patients (greater than 20 weeks)

- Pediatric patients who may need to undergo emergency or massive transfusion should be done at the physician’s discretion.
- For obstetrical hemorrhages in women greater than 20 weeks gestation, an institutional OB Massive Transfusion Protocol may be utilized.

DEFINITIONS:

1. Massive Transfusion is often defined as the transfusion of a patients’ total blood volume (approximately 4900 mL whole blood in a 70 kg adult) within 24 hours or the transfusion of a volume approaching 50% of the patient blood volume in 3 hours.
2. Exsanguination: Extensive blood loss due to internal or external hemorrhage that has often has a blood loss greater than 40% or to a degree sufficient to cause death

3. Emergency Release: The emergent release of blood products before the completion of compatibility testing.

POLICY:
1. MTP may be activated by attending physician or designee discretion.
2. Consider MTP for any of the following:
   a. Loss of 50% blood volume in three hours, an anticipated transfusion of a patient’s total blood volume (approximately 10 RBC units) within 24 hours, or requirement for > 4 units of RBCs in 1 hour with ongoing need for transfusion.
   b. Bleeding rate of greater than 150 mL per minute.
   c. Trauma Patients - Assessment of Blood Consumption (ABC) score:
      - Penetrating Trauma: 1 point
      - SBP ≤ 90: 1 point
      - HR ≥ 120: 1 point
      - Positive FAST * 1 point
      *(Focused Assessment w/ Sonography for Trauma)
      - Score of > 2 – activate MTP policy
   d. Persistent hemodynamic instability
   e. Active bleeding requiring operation or angioembolization

3. Implementation of MTP
   a. Every effort must be made to obtain a patient blood sample prior to transfusion
   b. Lack of a patient blood sample in an emergency situation will NOT delay or prohibit the emergency release and transfusion of uncrossmatched blood products (O-negative red blood cells).
   c. Further details regarding samples:
      Patients 6 years or older – one pink top tube / Patients less than 6 years of age – one lavender top tube
      i. All blood bank samples must have an affixed label with full patient name and medical record number labeled according to the hospital specimen labeling policy.
      ii. If unable to label according to policy, specimens must at minimum be labeled with a patient registration label that includes the patient’s full name, medical record number, and signature of the collecting
person. The accompanying requisition must contain date and time of collection along with clock numbers of the collecting person and the co-verifier.

iii. Patient information (name and MR#) on blood bank specimens MUST match any orders, request for blood products or other paperwork sent to the blood bank.

4. **Notification of Personnel**
   a. Activation and termination of the MTP is per practitioner order (attending physician or designee). The activation and termination phone call to the Blood Bank may be made by a designated RN.
   b. Notify the blood bank at x55926 (410-521-5926) that a Massive Transfusion Protocol is being initiated. Identify yourself by name and the name of the ordering physician for the case. This information will be documented by the blood bank in the comment section in Patient Product Inquiry.
   c. Provide the blood bank the patient name, medical record number and location.
   d. A point of contact (designated communicator) should be assigned to communicate directly with the blood bank. This will avoid confusion with communications, prevent duplicate orders, and improve the efficiency of product preparation and delivery.
   e. The blood bank will be able to provide information regarding the status of a type and screen on the patient. If a type and screen is needed, the blood bank will inform the established MTP point of contact.
   f. If the point of contact cannot be consistently maintained throughout the massive transfusion, responsibility must be transferred to a new point of contact. The transfer of responsibility must be communicated to the blood bank.
   g. The point of contact should notify the attending physician of any issues related to compromised ability to deliver blood products or lack of product availability as communicated by the blood bank.
   h. As necessary, the point of contact or blood bank staff may notify and utilize the Hospital Operations Coordinator (HOC) for assistance with coordination of services and communications.

5. **Obtaining and Transfusing Blood Products**
   a. At the initiation of the MTP, if a current type and screen is not available, uncrossmatched O-negative red blood cells will be provided. **This request for uncrossmatched blood must be authorized by a physician and may be ordered verbally.**
b. Group A or AB thawed plasma may be dispensed for patients without a known ABO/Rh.

c. Although uncrossmatched blood may be released in emergency situations as per verbal physician order prior to compatibility testing completion, documentation of the authorization for release and transfusion of uncrossmatched blood is required. The Blood Bank Responsibility Form must be signed by the ordering physician. The Blood Bank Responsibility Form must be completed for all uncrossmatched/emergency blood products released from the blood bank, even if some or all of the products are ultimately not transfused.

d. Once a type and screen (and ABO/Rh recheck if needed) is completed, ABO compatible Red Blood Cells and Thawed Plasma will be prepared and released.

e. Even if Thawed Plasma or Apheresis Platelets are not immediately available, Red Blood Cells (and all other available products) will be immediately released. The Thawed Plasma and/or Apheresis Platelets will then be released when available. The blood bank will communicate to the MTP point of contact when additional products are available.

f. Red blood cells and Thawed Plasma are provided in a cooler on ice. Apheresis Platelets and Thawed Cryoprecipitate are provided separately at room temperature.

g. All products will be prepared as listed in the chart below. All coolers must be picked up from the blood bank by a clinical staff member assigned by the designated point of contact. After issuance of cooler #1, the blood bank will continue to prepare products accordingly until the Massive Transfusion Protocol is terminated by an authorized person. The Blood Bank will notify the contact person when each additional cooler is ready for pick up.

<table>
<thead>
<tr>
<th>Northwest Hospital Massive Transfusion Protocol</th>
<th>RBCs</th>
<th>Thawed Plasma</th>
<th>Platelets</th>
<th>Cryo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Cooler #1</td>
<td>units of RBCs</td>
<td>units of thawed plasma</td>
<td>apheresis pack</td>
<td>EUs of cryo</td>
</tr>
<tr>
<td>Cooler #2</td>
<td>units of RBCs</td>
<td>units of thawed plasma</td>
<td>apheresis pack</td>
<td></td>
</tr>
<tr>
<td>Cooler #3</td>
<td>units of RBCs</td>
<td>units of thawed plasma</td>
<td>apheresis pack</td>
<td></td>
</tr>
<tr>
<td>Cooler #4</td>
<td>units of RBCs</td>
<td>units of thawed plasma</td>
<td>apheresis pack</td>
<td></td>
</tr>
</tbody>
</table>

*Northwest blood bank maintains 1 unit of apheresis platelets which will be released with cooler #1. Two additional apheresis platelet units will
be ordered immediately at the time of massive transfusion activation to accompany additional subsequent coolers (anticipated delivery 1 – 3 hours).

* Cryoprecipitate is not stored in the Northwest blood bank. It will be thawed and shipped from Sinai Hospital Blood Bank.

**STORAGE & TRANSPORT REQUIREMENTS:**

Red Blood Cells/Thawed Plasma: **IN COOLER / ON ICE.**

Platelet / Thawed Cryo: **ROOM TEMPERATURE**

(Not in Cooler)

h. All blood product coolers will be picked up from the Blood Bank and will require the minimum of a patient label. The label must contain the first and last name (or alias, as applicable) and the medical record number of the patient. A Blood Delivery Request (BDR) must be completed after the Termination of the MTP to account for all blood product dispensed from the blood bank to the patient location unless done so during the event.

6. **After the termination of the MTP:**

a. Attending Physician (or Designee) or RN contact person will terminate the Massive Transfusion Protocol when determined appropriate by calling the blood bank at x55926 (410-521-5926). The termination will be documented by the blood bank in the comment section of Patient Product Inquiry in Cerner.

b. All coolers **must immediately** be returned to the blood bank to allow for the return and inspection of any unused blood products.

c. An order for all blood products prepared (red blood cells, plasma, platelets and cryoprecipitate) must ultimately be entered into Cerner or written on a downtime requisition if not already ordered. This may be entered by the blood bank or the clinical staff. If being entered by the blood bank, a downtime requisition will be completed with minimum of “MTP Activation” as the order.

d. Blood Delivery Requests (electronic or downtime paper) for all blood products dispensed from the blood bank must ultimately be submitted by the clinical staff. This may be performed electronically or on downtime (paper) during the event at pick-up or after termination of massive transfusion.

e. The Blood Bank Responsibility Form must ultimately be signed by the ordering physician who requested uncrossmatched / emergency release blood products.
f. For procedural steps on patient identification and the administration of blood products, please refer the hospital Blood and/or Blood Component Transfusion- Inpatient policy.

g. The transfer of a patient to a critical care unit or other service will transfer the responsibility for all massive transfusion communication and/or termination with the blood bank to the physician accepting responsibility for the patient.

7. **Emergency Release of Uncrossmatched Blood**

   This process is intended for the emergency release of blood for a patient in situations where utilization of the Massive Transfusion Protocol (MTP) is not anticipated.

   Please note: If a transition / conversion to a MTP is anticipated at any time, the blood bank must be immediately notified in order to prepare products effectively.

   a. Uncrossmatched red blood cells are available for emergency release for situations where clinical circumstances require blood transfusion prior to the collection of a patient blood sample or completion of blood compatibility testing.

   b. Requests for uncrossmatched/emergency release blood should be communicated to the blood bank immediately at x55926 (410-521-5926).

   c. Identify yourself and provide the patient name, medical record number, patient location, and the ordering physician.

   d. Unless otherwise specified, two units of uncrossmatched O-negative red blood cells will be released immediately in a cooler on wet ice.

   e. All additional requests for products must be entered into Cerner or sent to the lab on a downtime requisition.

   f. When picking up products from the blood bank, a Blood Delivery Request (BDR) must be completed. This can be done in Cerner, or downtime Blood Delivery Request form. If one is electronically entered in Cerner, a minimum of a patient label is required to be provided at the time of pickup.

   g. Any documentation that is needed upon the termination of the event will need to be submitted to the blood bank. The blood bank will provide notification of required documentation.
8. **Debriefing / Post-Transfusion Assessment**

   a. Following utilization of Emergency Blood Release or Massive Transfusion Protocol, the attending physician should discuss events with the clinical staff and blood bank members to allow for both positive and negative feedback to the staff and overall process improvement.

   b. Significant feedback from events should be communicated to the NW Hospital Director of Quality and the Blood Bank Medical Director.

9. **Documentation:**

   a. The attending physician is responsible for documenting the activation and termination of the MTP, clinical events, and the outcome in the patient medical record.

   b. Nursing shall document vital signs, blood products administered, estimated or quantified blood loss, on-going observation for signs and symptoms of hemorrhage, and patient education.

   c. Patients who are transferred to the Intensive Care Unit after activation of the MTP are transferred to the Critical Care Service. In this event, the Critical Care Service will assume responsibility for terminating the MTP.

References:


https://www.facs.org/~/media/files/quality%20programs/trauma/tqip/massive%20transfusion%20in%20trauma%20guildelines.ashx


Original: February 14, 2018

Revised:

Reviewed: