

Title: PEDIATRIC MASSIVE TRANSFUSION POLICY

Scope:

Applies to patients ≤ 30 kg at MultiCare Health System (MHS) Mary Bridge Children’s Hospital only requiring massive transfusion in order to order many blood components at once and to reduce the incidence of intractable coagulopathy.

Policy Statement:

A physician directly involved in the care of the patient may initiate the pediatric massive transfusion protocol (PMTP) when the patient’s blood loss is greater than 30 ml/kg (i.e. massive bleed).

The PMTP blood component set includes the following blood components. A new set will be prepared by the Transfusion service immediately after each set is issued until canceled by the physician.

- 1 RBC
- 1 thawed plasma components (FFP)
- 1 platelet component (PLT) –transfuse 45 mL for each full RBC unit transfused

Continuation of the MTP should be reassessed after each set of blood components and discontinued at or around the following end point resuscitation goals:

1. INR < 1.7
2. Fibrinogen is greater than 100 mg/dl
3. Platelets greater than 50,000/uL
4. HCT greater than 27%
5. Core Temperature greater than 35.9 degrees centigrade
6. Base Deficit less than 5.0

Procedure:

I. Nursing: Initiate the Pediatric Massive Transfusion Protocol (PMTP)

- A. Assign one staff member the responsibility of managing the MTP to ensure timely access and administration of blood components.
- B. Order the “Pediatric Massive Transfusion Order Set” in EPIC.
- C. Notify the Transfusion Service to activate a Pediatric Massive Transfusion

Protocol for the patient, providing the following information:

- Patient name (or trauma ID)
- Patient MRN
- Name of physician initiating the MTP

D. Ensure adequate vascular access. Consider minimum two IV sites.

E. Assign a runner who will report immediately to the Transfusion Service with blood component pickup slip containing the patient name and medical record number (MRN), unless instructed otherwise.

F. Collect blood specimens:

1. Draw a stat crossmatch blood specimen.
2. Draw a stat Massive Transfusion Panel (Blood Count, PTT PT/INR, fibrinogen, ionized calcium, and ABG)
3. Repeat collection of specimens as indicated on the MTP Order Set.
4. Notify the lab and Transfusion Service of all incoming specimens.

*NOTE: Staff should note, document & communicate to the physician if any blood products were administered **after** a blood count and/or coagulation study was drawn & sent to the lab – as this could change the significance of lab values as they pertain to the **current** status of the patient.*

G. Coordinate transfusion of blood components.

If lab values are	Then
Available	Transfuse according to lab values (see Blood and Blood Component Criteria in EPIC)
Not available	Transfuse all components from the MTP

H. Initiate measures to maintain normothermia (hypothermia should be aggressively controlled).

1. For Trauma patients: Conduct warming measures in compliance with the *Reverse Hypothermia in the Trauma Patient – Protocol*.
2. Use blood warmers for RBCs and plasma in compliance with the *Blood and Blood Components Administration/Documentation* policy and the *Blood Warmers* policy.

NOTE: Do NOT use blood warmers for platelets and cryoprecipitate.

3. Heat the ventilator humidifier if necessary to obtain normothermia.

I. Monitor patients for the following complications:

- Hypothermia
- Hyperkalemia

- Hypocalcemia
- Respiratory Distress
- Transfusion reactions (including: acute hemolytic, allergic, febrile, septic, transfusion related acute lung injury (TRALI), volume overload and delayed hemolytic reactions)

J. Order one cryoprecipitate in EPIC after the second round of blood components has been received for transfusion (or a total of 2 RBCs, 2 FFP, and 90ml PLT have been transfused)

K. Notify the Transfusion Service immediately when the physician discontinues the PMTP because the patient has stabilized.

NOTE: If the care of the patient transfers to another physician, then that physician assumes responsibility for the management of the PMTP.

L. Refer to the MHS *Blood and Blood Components Administration/Documentation* policy for additional information.

II. Transfusion Services:

A. Initiate PMTP in the Transfusion Service

1. Receive call from person initiating the PMTP
2. Lookup the patient in SunQuest
3. Verify the following orders are present for the patient:

- TFFP
- TPLT
- XM

If the orders are	Then
Present	Proceed
Absent	Ask the caller to place PMTP order

4. Ask for the following information for efficient communication:
 - Name of the RN designee
 - Phone number
5. Check patient ABO/Rh and history to select appropriate RBCs
6. Instruct caller to send someone to the Transfusion Service immediately to transport blood components

B. Allocate and Issue 1st group of blood components

1. Allocate and issue 1 RBC on ice with temperature indicator
2. Allocate and issue 1 PLT
3. Allocate and issue 1 FFP

C. Prepare a new set of 1 PRBC, 1 FFP and 1 PLT after the first set is issued, repeat after each issue until canceled.

	<p><i>NOTE: Do not issue a new platelet until the initial platelet issued has been completely transfused or 4 hours has passed, whichever comes first.</i></p> <p>D. Thaw 1 CRY in the event that cryo is ordered.</p> <p>E. Ensure physician signature is obtained on the <i>Emergency Request for Uncrossmatched Blood</i> form if uncrossmatched RBCs are issued.</p>
	<p>Related Policies:</p> <p>MHS Policy: "<i>Blood and Blood Components Administration/Documentation</i>"</p> <p>MHS Policy: "<i>Blood Warmers</i>"</p> <p>Laboratories Northwest Policy "<i>Emergency Uncrossmatched Blood</i>"</p> <p><i>MB Trauma Policy: " Resuscitation of Pediatric Trauma Patient"</i></p>
	<p>Attachments:</p> <p>Appendix A: Pediatric Massive Transfusion Protocol</p>
	<p>Related Forms:</p> <p><i>Emergency Request for Uncrossmatched Blood (88-2474-0)</i></p>
	<p>Point of Contact:</p> <p>MB Trauma Program Manager 253-403-XXXX</p> <p>Transfusion Service Manager 253-403-1321</p>
<p>Approval By:</p> <p>MB Trauma Committee</p> <p>MHS Transfusion Committee</p> <p>Tacoma Pediatric Committee</p> <p>West Pierce Medical Staff Operations Committee</p> <p>MB Nurse Executive</p> <p>Quality Steering Council</p>	<p>Date of Approval:</p> <p>3/19/15</p> <p>6/15</p> <p>5/14/2015</p> <p>7/15</p> <p>4/22/2015</p> <p>8/15</p>
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Distribution: MHS Intranet

ATTACHMENT A: Pediatric Massive Transfusion Flow Chart

Pediatric Massive Transfusion Protocol (PMTP)

