St. John Medical Center
Medical Excellence • Compassionate Care
1923 S. Utica Ave. Tulsa, OK 74104-6502

ICU

MASSIVE TRANSFUSION PROTOCOL – ADULT

PROTOCOL PURPOSE

1. To insure quality patient care by providing an appropriate product mix of Blood and/or Blood components for massively transfused patients at St. John Medical Center, Inc.

2. To facilitate the ordering and release of blood products in the most timely and efficient manner.

3. To facilitate the ordering and timely results of coagulation and other hematology tests.

Definition of Mass Transfusion:
- Replacement of 30% of total blood volume within 2 hours (approximately 4 units of PRBC's)
- Replacement of 50% of total blood volume within 3 hours (approximately 5-6 units of PRBC's)
- Replacement of patient's entire blood volume within a 24-hour period (approximately 10-12 units of PRBC's)

PROTOCOL POLICY

In an urgent situation, uncrossmatched blood products can be obtained from the Blood Bank at St. John Medical Center, Inc., when a physician deems the patient's life would be in danger without blood products. When uncrossmatched blood products are requested in an urgent situation, the dispensing of these products will follow the protocol set out in (SOP F-27), Emergency Release of Blood and/or Blood Components. The SJMC personnel, i.e., the employee that is designated at the time to retrieve the blood products, will be responsible for picking up blood products from the Blood Bank. The Blood Bank personnel do not have the responsibility to deliver blood products.

The Massive Transfusion Protocol (MTP) will be initiated by the Physician if clinical indications exist. The Blood Bank may also initiate the MTP if critical blood usage is met.

TRANSFUSION PROCEDURE

1. When the HIPLINK pager alert is given to ER and Blood Bank, the Blood Bank personnel will be on alert with 4 units, O negative, packed red blood cells (PRBC's) available for transfusion upon patient arrival.

2. Initiation of MTP:

A. **Physician** will initiate MTP if:

i. Physician deems it necessary when the patient arrives in the Emergency Room, Surgery or the location involved.

B. **Blood Bank** in conjunction with communication to the ER, OR, or the location involved will initiate MTP if:

i. 4 units of PRBC's have been transfused in less than 2 hours.

ii. 5-6 units of PRBC's have been transfused in less than 3 hours.

iii. 1 blood volume, 10-12 units of PRBC's have been transfused within 24 hours.

iv. HIPLINK "alert" blood is issued to ER or OR.

3. Steps to be taken after the MTP has been initiated:

A. Attending staff will provide Blood Bank with specimens for Blood Bank and for initial MTP Coagulation Panel. (Hemoglobin and Hematocrit, Platelet Count, PT/PTT, Fibrinogen)

i. 7 ml pink tube filled, with proper Blood Bank identification and patient bracelet (initial draw only)

ii. 5 ml purple tube filled

iii. 4.5 ml blue tube filled

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B. Blood Bank will provide 4 units of PRBC's of ABO type specific blood or type O if blood type is unknown.

i. Blood will be dispensed uncrossmatched as soon as it is available; crossmatched blood will be prepared if a 45-60 minute delay is aceptable for patient safety.

ii. Blood Bank will provide Rh negative blood as follows:

a. For women < 50 who are Rh negative or Rh type is unknown.

b. The first 4 units of blood to women > 50 or to men if Rh type is unknown, thereafter the technologist may switch to Rh positive depending on the inventory.

C. Components should be prepared based on the MTP Coagulation Testing Panel results. See section D. However, an MTP Blood Pack will be prepared if requested by the physician, or after the first 4 units of PRBC's have been transfused and test results of the MTP Coagulation Panel are unknown or if there is not adequate time to perform testing.

An MTP Blood Pack includes:

i. 6 units PRBC's, approximately 4 FFP (10-15 ml/Kg. body weight), half platelet pheresis (4-6 units equivalent)

ii. If the patient is still bleeding and lab values are outside the action threshold, individual components should be increased, i.e., full platelet pheresis (approximately 6-8 unit equivalent and 6 FFP or a dose of 20 ml FFP/Kg. body weight)

D. Component should be administered based on the test results as follows:

i. PRBC's	none	4 units
ii. FFP	PT/PTT 1.5 x Mean normal Or PT INR > 1.6	2 units, if weight is unknown, or 10-20 ml/Kg. body weight
iii. Platelets	< 100,000/cumm	1 full pheresis (6-8 units)
	< 50,000/cumm	2 full pheresis (10-12 units)
iv. Cryoprecipitate	Fibrinogen < 100	1 bag/10 Kg. body weight or 10 units, if body weight is unknown

E. After Blood Bank dispenses each round of components, a **STAT** MTP Coagulation Testing Panel will be performed. The runner who picks up the MTP pack will deliver blood to the Blood bank for the MTP Coagulation Testing Panel which will determine the need to continue the MTP. Blood Bank will begin preparing the next round of components for potential need.

i. Blood Bank will call reesults to the attending and ask if the MTP should continue.

ii. If MTP protocol continues, Blood Bank will finish preparation of the next MTP Blood Pack and contact the OR (or area involved) when components are ready to be issued.

iii. Before picking up next round of components, OR (or area involved) will submit blood for the next MTP Coagulation testing to be performed STAT.

iv. Termination of the MTP protocol is directed by the surgeon or attending physician.

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