LITTLETON REGIONAL HEALTHCARE
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POLICES AND PROCEDURES

TITLE:	Massive Transfusion Protocol ED	
EFFECTIVE DATE:	November 2019	**POLICY NO:**
DISTRIBUTION:	Nursing Services	**REGULATORY STANDARD:**
REPLACES NO:		
FORMULATED BY:	Clinical Director Critical Care Services, Blood Bank	
APPROVED BY:	ED Medical Director	
REVIEW DATE:		
REVISION DATE:	November 2019	

I. PURPOSE

To outline the standard process for safe, rapid preparation and delivery of blood products in the patient experiencing massive hemorrhage in the emergency department.

II. POLICY

Massive transfusion Protocol will be used when a patient in the emergency department is experiencing significant hemorrhage and is at risk of exsanguinating. The Massive Transfusion Protocol (MTP) can be invoked by any emergency department physician in an emergent situation, i.e. trauma. The Blood Bank must be called with the attending physician name who is initiating the massive transfusion protocol. The Blood Bank must receive either a verbal or electronic order for the blood products.

III. Procedure

A. The attending physician will initiate the MTP and place either a verbal order or electronic order to initiate MTP

B. The blood bank will be notified of the activation of the MTP and follow their policy and procedure for release of 4 units of PRBCs to the Emergency Department (ED) and ask if the Physician is also ordering 4 units of fresh frozen plasma to initiate thawing. Plasma will take approximately 30 minutes to thaw.

1. In calling the Blood Bank provide the following information
   - **a.** Patient full name (if known)
   - **b.** MRN or Date of Birth
   - **c.** Gender- this is the most important information if the patient is unknown.
   - **d.** Location of the patient
   - **e.** Physician activing the MTP
2. If time permits ABO specific or type compatible RBCs will be issued otherwise Group O RBCs will be issued.
3. If the patient's type is unknown group AB or group A plasma will be provided
4. If the patient's type is known group specific/ or ABO compatible plasma will be provided.

C. Blood will be drawn as soon as possible for type and screen, INR, PT, PTT, fibrinogen, d-dimer, CBC, lactate and BMP. Blood drawn by EMS cannot be used for Type and Screen unless the lab has patient history information available.
D. ABG will be drawn as soon as possible
E. Two large bore IVs (18 gauge or greater) will be placed or a central line will be placed
F. Obtain continuous core temperature monitoring
G. Prepare level one rapid infuser for use
H. Begin infusion of colloid or crystalloid infusions as ordered by provider
I. If possible consider obtaining arterial pressure monitoring
J. Blood Bank will prepare and deliver the MTP blood products to the emergency department
K. Transfusion of blood components is one unit of RBC alternating with one unit of Plasma. The sequence will continue until the MTP is ordered to stop by the attending physician.
L. Every 60 minutes the following labs will be drawn:
    1. Ionized calcium
    2. Magnesium
    3. PT/INR
    4. PTT
    5. D-Dimer
    6. Fibrinogen
    7. CBC
    8. BMP
    9. ABG
M. Once blood products have been started crystalloid solutions should be limited so as not to dislodge the early forming hemostatic clot.
N. Vital signs will be documented in the electronic medication record per blood product administration standards and patient acuity needs but no greater than every 15 minutes for (heart rate, blood pressure, respiratory rate, and oxygen saturation).
O. Documentation of blood product administration will be completed on the MTP paper flowsheet. Once the protocol is complete one copy will be placed in the patient's chart and one copy will go to the blood bank.
P. **All RBCs and thawed plasma will remain in the MTP cooler until ready for immediate infusion.**
Q. **All unused blood products must be returned to the Blood Bank in the appropriate transport device as soon as possible following discontinuation of the MTP.**
R. All empty blood bags are saved and returned to the Blood Bank
S. The decision to discontinue the MTP is based on evaluation of patient stability and the ongoing severity of bleeding. The order to end the protocol will be given by the attending physician.
T. The patient will receive continuous monitoring for adverse outcomes during after the initiation of the MTP.
    1. Citrate toxicity, manifested by hypocalcemia and hypomagnesemia
    2. Hyperkalemia
    3. Acidosis
    4. Hypothermia
    5. Transfusion Associated Circulatory Overload
    6. Transfusion Associate Acute Lung Injury (TRALI)
    7. Acute traumatic coagulopathy

IV. REFERENCES

Emergency Nurses Association (2014). *Trauma nursing core curriculum* (7th ed). Des Plaines, IL: Emergency Nurses Association.

LRH Lab Emergency Blood Release Policy and Procedure

Patil, V. & Shetmahajan, M. (2014). Massive transfusion and massive transfusion protocol. Indian Journal of Anaeshesia, 58(5), 590-595.