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

### PRINCIPLE:

The Massive Transfusion Protocol is indicated when it is anticipated that a patient requires massive amounts of blood and blood products in order to stabilize hemorrhage. We want to avoid the excess use of blood components, contain cost, and improve patient outcomes.

**CLINICAL SIGNIFICANCE**:

The Massive Transfusion Protocol should be initiated for those patients anticipated to require 10 units of blood in a 24-hour period or 5 units in a 4-hour period. (American Association of Blood Banks)

As a result of military studies it is recommended that the infusion of fresh frozen plasma (FFP): packed red blood cells (PRBC’s): platelets in a 1:1:1 ration is optimal and the minimization of crystalloids and/or synthetics colloids be used.

It is highly recommended that the Level 1 Fluid warmer be used for these patients.

## REAGENTS AND EQUIPMENT:

See Individual Procedures

### CALIBRATION

###### None Indicated

## QUALITY CONTROL:

###### None indicated

**STEPWISE PROCEDURE:**

1. The Emergency Room/ ICU/OR staff will notify the blood bank that the Massive Transfusion Protocol is being initiated along with appropriate identification of the patient
2. Draw patient sample for Massive Transfusion Protocol in accordance with Procedure

#4840-BB-100 Ordering Blood and Other Components.

1. Lab will bundle the blood products as per the following template and send each tier to the requesting unit at 30-minute intervals. The requesting unit should send a runner to

transport the blood. If no one is available the tube system may be used as a last resort, the standard code to receive the blood should be the month & day of the event. (i.e. March 3rd would be 0303, Nov 15th would be 1115).

1. Blood should automatically continue to be delivered until the blood bank is notified that blood is no longer needed

**EXAMPLE:**

|  |
| --- |
| Schedule for delivering blood and blood products for massive transfusion protocol. |
| **Shipment** | **RBC** | **FFP****Thawed** | **Pheresed Platelets** | **Cryo** |
| Start Time6:30Trauma Patient | 2 O-neg |   |   |   |
|   At start time 6:30 | 5(3 if 2 Oneg already sent) | 5 | 1 | 0 |
|   30 mins 7:00 | 5 | 5 | 1 | 10 or 2/5packs |
|  1 hr7:30 | 5 | 5 | 1 | 0 |
|  1 1/2 hrs8:00 | 5 | 5 | 1 | 10 or 2/5packs |
|  2 hrs8:30 | 5 | 5 | 1 | 0 |
| 2 1/2 hrs9:00 | 5 | 5 | 1 | 10 or 2/5packs |
|  3 hr9:30 | 5 | 5 | 1 | 0 |
| 3 1/2 hrs 10:00 | 5 | 5 | 1 | 10 or 2/5packs |
|  4 hr10:30 | 5 | 5 | 1 | 0 |
| 41/2 hrs11:00 | 5 | 5 | 1 | 10 or 2/5packs |

1. All unused blood components need to be returned to the blood bank as soon as possible.
* The template for MTP can be found on the S drive Blood Bank Schedule for delivering blood for massive transfusion protocol
1. At any point during the Massive Transfusion Protocol the physician may consider drawing a TEG. The specimen will come down as a sodium citrate tube (blue top). The TEG graph will help them know how to proceed with the MTP or if it is no longer necessary. Please reference procedure #4840-TEG-103 and #4840-TEG-104 for more information.

## REPORTING AND INTERPRETING RESULTS:

None Indicated

## PROCEDURAL NOTES:

As much as possible in an emergent situation, Rh negative females, between birth and 55 years of age, will be given Rh negative products.

**NOTE**: At the completion of the Massive Transfusion Protocol, please file all orders for Massive Transfusion in the “Emergency Release and MTP” folder for the current year in the front of the completed orders bin. These orders are to be retained for 10 years.

**REFERENCE:**

**References**

 **1. Massive Transfusion Protocol for Trauma, Forestner, John E., November 2008**

 **2. A Massive Transfusion Protocol to Decrease Blood Component Use & Costs, O’Keeffe, Terence, MB, ChB, MSPH, et all, ARCH Surg/Vol 143 (NO.7) July 2008**

 **3. Region IX Trauma Guideline: Massive Transfusion**