Table 1. Massive Transfusion Protocol @ MetroHealth Medical Center, Cleveland, Ohio

PRINCIPLE:

A massive transfusion protocol (MTP) is identified by a clinician in response to a patient that is experiencing massive bleeding. The clinician contacts the Blood Bank and activates the MTP. Once a particular patient is identified as being entered into the Massive Transfusion Protocol, the following is followed. This situation is encountered in surgical or medical emergencies as well as in trauma.

SPECIMEN:

Pre- or post-transfusion blood sample (signed, 7mL pink top tube) from massively transfused patient.

QUALITY CONTROL:

See procedure: DAILY REAGENT QUALITY CONTROL

MATERIALS/REAGENTS:

See procedure ABO GROUPING, D ANTIGEN TESTING, ANITBODY SCREENING TEST, COMPATIBILITY TESTING

PROCEDURE:

1. When clinician contacts Blood Bank on the distinct-ring, MTP Hot-line phone (X89000) and gives a verbal order to begin the MTP on a patient, complete a pink verbal PHONE ORDER form. Record two patient identifiers, the date, location, the physician’s name/PIN #, and the person calling and initiating the MTP.

2. A runner will come to the Blood Bank to obtain the products. Do NOT tube the blood.

3. **FIRST MTP PACK** - Collect the 4 O Negative RBCs and 2 AB plasma units already set-up for Emergency Release. Pack in a Blood Bank Insulated Cooler. Complete the pink ALERT label for the insulated cooler, the INSULATED COOLER – BLOOD STORAGE TRACKING SHEET and the INSULATED COOLER SIGN-OUT SHEET. See procedure BB1 65.0 – Transportation of Blood in an Insulated Cooler.

4. As soon as the 1st MTP pack is issued, begin preparing the 2nd MTP pack.

5. If a sample has not yet been submitted contact the Blood Bank Medical Director and inquire as to whether the patient should be switched to O Rh Positive.

6. **SECOND MTP PACK** – 6 units of RBCs (O Neg/Pos or type specific if sample has been submitted)
   4 units of Plasma (AB or type specific if sample has been submitted)
   Necessary Emergency Release/Insulated Cooler paperwork

7. As soon as the 2nd MTP pack is issued, begin preparing the 3rd MTP pack.

8. Third and subsequent packs should have the RBCs crossmatched using the **BB1 43.0 - Massive Transfusion Abbreviated Crossmatch Procedure** since 10 RBCS will at that point be issued in less than a 24 hour period. (See procedure.)

9. **THIRD AND ALL SUBSEQUENT MTP PACKS CONSIST OF THE FOLLOWING** –

   6 units of RBCs (O Neg or type specific if sample has been submitted)
   4 units of Plasma (AB or type specific if sample has been submitted)
   6 random A/AB platelets (or one 5-day pool or 1 apheresis platelet product)
   Insulated Cooler (Do NOT place platelets in cooler, for RBCs/Plasma only)
10. Continue with preparing an MTP PACK after an MTP pack has been issued until the Blood Bank has been notified by a clinician to discontinue the MTP. Record on a verbal Phone Order the two patient identifiers, the date, location, the physician's name/PIN #; and the person calling to inactivate the MTP order.

PROCEDURAL NOTES:

1. Once the second MTP PACK has been issued, the BB1 43.0 - Massive Transfusion Abbreviated Crossmatch Procedure may be initiated since 10 units of RBCs will have been issued.

2. Clinician should send a blood sample to the Blood Bank as soon as possible (signed, 7mL pink top tube) via pneumatic tube station 122 or via a runner.

3. Since there are only 2 Insulated Coolers, remind runners to bring back the empty Insulated Cooler each time they come back for another MTP pack of blood so that Blood Bank tech can pack the next MTP pack in it. Remind runner to also bring any completed Emergency Release forms and INSULATED COOLER – BLOOD STORAGE TRACKING SHEETs.

4. As long as RBCs and Plasma remain in properly packed insulated cooler, their storage is good for up to 8 hours and may be returned to inventory if not used and otherwise acceptable.

5. Keep ahead as much as possible with the platelet orders. Order two 6-packs of platelets from the blood supplier each time a courier run of platelets is needed during an MTP.

6. If it is discovered that the patient has a history of clinically significant alloantibodies, all RBC units prepared for the patient MUST be screened antigen negative for the patient's antibody(ies) if possible. It is important to remember that the patient's antibody(ies) may not be demonstrating due to dilution with large volumes of donor blood and components, but if antigen positive units were infused they would have shortened survival.

7. In the above situation, antigen positive blood may be issued upon written or verbal approval of the Blood Bank Medical Director. Document approval on the Emergency Blood Product Release Request Form. If the request is at a time when the Blood Bank Medical Director is unavailable, the ER physician may sign for the antigen positive blood and the Blood Bank Medical Director and/or Blood Bank Supervisor should be notified that day. Record this event in the deviation book for Blood Bank Medical Director to review and sign. Notify clinician or nurse of the situation. Document who you spoke to in Patient Comments in LIS. As soon as possible, units should be tested for the antigen and the test results conveyed to the Supervisor/Medical Director for guidance.

8. Patients involved in a Massive Transfusion Protocol (see procedure) will only receive RBCs crossmatched via the abbreviated method once the Blood Bank has issued 10 units of RBCs and not before.

9. Paperclip the start and stop verbal PHONE ORDERs to the Emergency Release forms for the Medical Director review.

REFERENCES:

AABB Standards, Current Edition
MHMC Policy, 2008
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### Annual Management Review

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