

**VANDERBILT UNIVERSITY MEDICAL CENTER
DIVISION OF TRAUMA AND SURGICAL CRITICAL CARE**

Massive Transfusion Protocol

Background: Protocolized transfusion has been shown to improve clinical outcomes as well as transfusion efficiency in patients who require massive transfusion (>10 u in 24 hours). This document provides guidelines for utilization of the massive transfusion protocol (MTP) at VUMC.

1. Patient selection
 - a. Patients with current, ongoing, or impending massive blood loss should be considered for activation of MTP.
 - b. Activation of massive transfusion protocol should be considered for patients who received greater than two units of blood in the emergency department.(1)
2. Activation
 - a. MTP may be activated by the attending surgeon, intensivist or designated surrogate. If surrogate activates MTP, attending surgeon of record must be provided to blood bank (BB).
 - b. MTP may be activated by trauma/surgical cc faculty, fellows and instructors; anesthesiology faculty; and selected surgical faculty ONLY.
 - c. Upon suspicion of MTP activation, type and screen must be sent to BB as soon as possible.
 - d. To activate MTP, call the BB at 2-2233 and provide the following information
 - i. "This is Dr. _____ activating MTP....."
 - ii. Patient name
 - iii. Patient MRN. This will be repeated by BB personnel for verification purposes.
 - iv. Patient age
 - v. Patient gender
 - vi. Current or intended location
3. Product breakdown
 - a. Each round of MTP provides 6U PRBC, 4U FFP, 1 dose pack of platelets
 - b. Repeat rounds of MTP contain identical product "doses"
4. Administration
 - a. Products are delivered, and BB calls patient location to verify continuation of MTP. Default is to continue MTP until verbally discontinued by faculty physician.
 - b. MTP boxes are intended to be given in their entirety until completed. If not all products are desired, strong consideration should be given to MTP discontinuation.
5. Endpoints/termination
 - a. When appropriate endpoints are reached, the MTP must be discontinued to limit resource utilization.
 - b. Most reliable transfusion endpoint is a collaborative decision based on operative field examination, laboratory results, and clinical parameters.
 - c. Premature discontinuation of MTP should be avoided to minimize catch-up reactive transfusion.
6. Pitfalls, common errors
 - a. Failure to send type and screen.
 - i. T&S must be sent upon suspicion of MTP requirement.
 - b. Returning platelets on ice.
 - i. Cold temperature destroys platelets. Must be returned in cooler side pouch.
 - c. Failure to identify significant hemorrhage, delayed MTP activation.
 - i. Results in delayed resuscitation. Over-activation is expected.

- d. Premature termination.
 - i. Consider continuing MTP until patient stabilizes in the ICU.
- e. Failure to provide entire box/dose.
 - i. If not all products are required, d/c MTP and transfuse PRN.
 - ii. Collaborate with intensivist/anesthesiologist regarding transfusion plan.
- f. Reliability on laboratory tests alone for transfusion indication.
 - i. Laboratory tests are unreliable in the hyperacute setting.
- g. Inappropriate personnel activating MTP.
 - i. BB personnel are empowered to refuse MTP to callers who are not authorized to activate protocol.

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1. **Nunez, T.C., Voskresensky, I.V., Dossett, L.A., Shinall, R., Dutton, W.D., and Cotton, B.A. 2009. Early prediction of massive transfusion in trauma: simple as ABC (assessment of blood consumption)? *The Journal of trauma* 66:346-352.**

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