



Massive Hemorrhage Protocol

APPENDIX B: Less than 50kg Massive Hemorrhage Protocol Flowchart

- Appropriate Initial Interventions:**
- IV/IO access: 2 large bore IVs ± CVC
 - Crystalloid: as per attending physician
 - **Order MHP labs, Type and Screen (as needed), ABG**
 - Continuous Monitoring
 - Use blood warmer for transfusions if available
 - Prevent/reverse acidosis
 - Correct hypocalcemia:
 - **Adults: Ca gluconate 3 g IV slowly or Ca Chloride 1 g IV slowly****
 - ** Calcium chloride is a vesicant. Infuse through central line if available.
 - **Pediatrics: Ca gluconate 30 mg/kg/dose IV slowly**
 - Transfuse with unmatched RBCs if, needed

- Other Considerations:**
- Heparin reversal: **Protamine 1 mg IV / 100 Units of heparin**
 - Warfarin reversal:
 - **Vitamin K 10 mg IV**
 - **Prothrombin Complex** as per TM protocol dosing for INR and weight
 - Direct Factor X inhibitor bypass: **25-50 IU/kg PCC** (to a max of 3000 units)
 - Dabigatran reversal – **Idarucizumab 5 g** over 20 minutes
 - Consider antifibrinolytics: **Tranexamic Acid 10-15mg/kg bolus** (if not already administered) **followed by 1mg-5mg/kg/h infusion**

General Guidelines for Blood Component and Product Replacement:

RBCs	Aim for Hgb of at least 80 g/L in actively bleeding patient Dose: MD discretion (20 mL/kg reasonable start)
Plasma	If INR>1.8 Dose: 10-20 mL/kg
Platelets	If Plt <50 x 10 ⁹ /L or <100 x 10 ⁹ /L if CNS or ocular injury Dose: Adult: 1 platelet pool Pediatric: 10-20 mL/kg to max of 1 platelet unit
Fibrinogen	If Fibrinogen: ≤1.5 g/L (Trauma, GI, or surgical bleeding) ≤ 2.0g/L (Obstetrical or CV bleeding) Dose: Fibrinogen: 30-60 mg/kg

LESS than 50kg Massive Hemorrhage Protocol Flowchart

Massive Hemorrhage definitions: (1) Blood loss > 150 mL/min; (2) Replacement of 50% of blood volume in 3 h; or (3) Greater than one blood volume in < 24 h.

Identify & Manage Bleeding

- >10 mL/kg RBC transfused in ≤ 4 hours and ongoing major bleeding. **Consider activating MHP**
- >20 mL/kg RBC transfused in ≤ 4 hours and ongoing major bleeding. **Activate MHP**
- Coordinate with appropriate service intervention for definite hemorrhage control.

Dedicated Porter or Runner

1. Arrange **lab specimen transport** and Kit #1 pick-up (with pick-up slip or equivalent)
2. **Deliver Kit #1** to patient location
3. Arrange transport of follow-up labs specimens and pick-up subsequent Kit(s) as appropriate
4. Remain assigned to patient until MHP is stopped regardless of change in location

Communicate

- TM physician will contact MRHP with actionable lab parameters and changes required to Kit contents
- MRHP/designate to contact TM physician with pertinent clinical info requiring changes to Kit contents and prior to requesting Kit #2.
- Notify TM lab if patient location is changing
- Call TM lab if additional blood components or products are required
- The TM physician can adjust Kits based on labs as needed

Activate MHP

1. **Call** Transfusion Medicine (TM) lab and provide:
 - Patient **name/alias, pMRN/ULI, gender, weight, age/estimated age**
 - Current patient **location**
 - **Indication** for MHP
 - Name of clinical contact and **MRHP**
 - **History** of anticoagulant or antiplatelet agents, if known
2. Record name of TM contact
3. Send dedicated porter or runner to TM lab (Clinical area or TM lab-coordinated per site practice)
4. Order MHP in Epic

