

# **Massive Hemorrhage Protocol**

#### Leaders in Laboratory Medicine

## APPENDIX A: Greater than or equal to 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:
  - o Ca gluconate 3 g IV slowly or
  - Ca Chloride 1 g IV slowly \*\*
    \*\*Calcium chloride is a vesicant. Infuse through central line if available.
- Transfuse with unmatched RBCs, if needed

#### **Other Considerations**

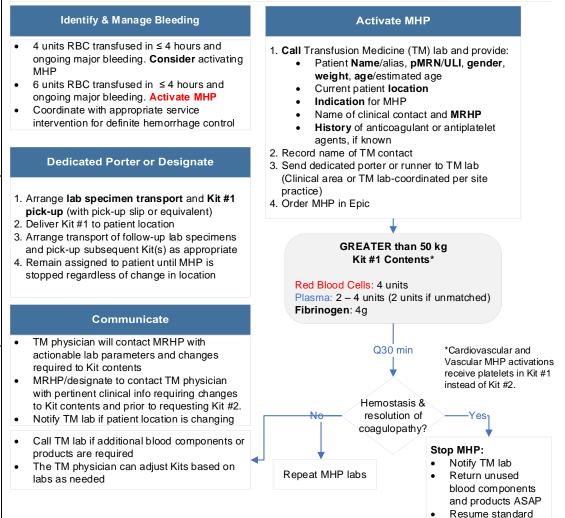
- Heparin reversal: Protamine 1 mg IV / 100 Units of heparin
- Warfarin reversal:
  - o Vitamin K 10 mg IV
  - **Prothrombin Complex** (dose as per INR based protocol)
- Direct Factor X inhibitor bypass: 25-50 IU/kg PCC (to a max of 3000 units)
- Dabigatran reversal Idarucizumab 5 g over 20 minutes
- Consider antifibrinolytics: Tranexamic Acid 1 g IV bolus (if not already administered) followed by 1g over 8 hours

# General Guidelines for Blood Component and Product Replacement in Adults:

- **RBCs** Aim for Hgb of at least 80 g/L in actively bleeding patient.
- Plasma If INR>1.8 Typical dose: 10-20 mL/kg
- Platelets If Plt <50 x 10<sup>9</sup>/L or <100 x 10<sup>9</sup>/L if CNS or ocular injury Typical dose: 1 platelet pool
- FibrinogenIf Fibrinogen:<br/> $\leq 1.5$  g/L (Trauma, GI, or surgical bleeding)<br/> $\leq 2.0$  g/L (Obstetrical or CV surgical)<br/>Typical dose: Fibrinogen concentrate: 4 grams

### GREATER than or equal to 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.



ordering practices