

PEDIATRIC PATIENTS, NON-DEFINITIVE CARE AT HOSPITAL
 NO PLASMA AVAILABLE ON SITE
 PATIENT TO BE TRANSFERRED TO TERTIARY CENTRE

To be repeated on each page

**MASSIVE HEMORRHAGE
 PROTOCOL (MHP) CHECKLIST**

TIME & PACK	ACTION	☐ INITIALS
ACTIVATION & PACK 1 (date dd __/ mo __/ yr __ time __/ __)		
	MHP Lead RN: _____	
	Call to hospital locating (ext. ----) to activate CODE TRANSFUSION	☐
	Provide patient number, name, sex, age, body weight in kg (if < 13 years of age), location, and information regarding patient use of antiplatelet or anticoagulants to blood bank at ext. ---- Anti-platelets ☐ Yes; Anticoagulant ☐ Yes, drug name: _____	
	☐ Ensure identification band is affixed to patient	
	☐ Obtain group and screen sample	
	☐ Obtain baseline blood work	
	Tranexamic acid: Consider administering 30 mg/kg iv bolus tranexamic acid (maximum dose 2 g) over 20 minutes and an iv/io infusion of 10 mg/kg/hour <i>Hold if: more than 3 hours from injury/onset of hemorrhage or given pre-hospital or pre-activation or patient has a gastrointestinal hemorrhage</i>	☐
	Hypothermia prevention: ☐ Measure and document patient temperature ☐ Obtain blood warmer for all infusions ☐ If patient temperature less than 36°C start active warming	
	Initiate transfer out: Notify if required: ☐ CritiCall - 1-800-668-4357 ☐ EMS ☐ Ornge	☐
	Obtain 1st MHP pack (if not obtained before activation): Pack arrival time (__/ __/ __) ☐☐☐☐ 4 units Red Cells (RBCs) [# units dependent on the patient's body weight (kg); 20 ml/Kg per dose, unless laboratory results direct otherwise] <i>Use Rh-negative blood only for females</i> <i>Avoid additional boluses or infusions of crystalloid except on physician order</i>	☐
	☐ Platelets (if available): If platelet count below 50 x10 ⁹ /L or patient on an antiplatelet drug, transfuse 10 mL/kg of pooled platelets	☐
	☐ Fibrinogen: if fibrinogen less than 1.5 g/L, administer 50 mg/kg fibrinogen concentrate (max dose 4 g if > 30 kg; max dose 2 g if < 30 kg) over 5 min by iv push	☐
	☐ Calcium: 20 mg/kg (maximum 1 g) Calcium Chloride or 60 mg/kg (maximum 3 g) Calcium Gluconate iv push after pack 1 or ionized calcium <1.15 mmol/L	☐
	Anticoagulant reversal: ☐ If Warfarin: PCC 15 IU/kg (for INR <3 or if INR unknown) or PCC 30 IU/kg (for INR > 3) iv over 10 minutes AND Vitamin K 1- 10 mg (neonate to adolescent) iv over 10 min	☐ ☐

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	<input type="checkbox"/> If Xa inhibitors (e.g., apixaban, rivaroxaban), Dabigatran, or Heparins: consultation with hematologist recommended	
PACK 2 (Arrival time __/__/__)		
	<input type="checkbox"/> Obtain hour one blood work	
	<input type="checkbox"/> Review last set of blood work to ensure at target: Hemoglobin greater than 80 g/L, INR less than 1.8, fibrinogen greater than 1.5 g/L, platelets greater than 50x10 ⁹ /L, blood glucose > 4 mmol/L , ionized calcium ≥ 1.15 mmol/L & potassium < 5.8 mmol/L	<input type="checkbox"/>
	<input type="checkbox"/> Measure and document patient temperature <input type="checkbox"/> If patient temperature less than 36°C start active warming	
	Obtain 2nd MHP pack (if needed): Transfusions based on laboratory measures where feasible <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 4 units Red Blood Cells [# units dependent on the patient's body weight (kg); 20 ml/Kg per dose, unless laboratory results direct otherwise)] <input type="checkbox"/> Prothrombin Complex Concentrate 25 IU/kg (round to closest 500 IU) max 2000 IU <input type="checkbox"/> Fibrinogen concentrate 50 mg/kg (max dose 4 g if > 30 kg; max dose 2 g if < 30 kg) over 5 min by iv push	<input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> Platelets (if available): if platelet count < 50 x10 ⁹ /L, 10 mL/kg of pooled platelets	<input type="checkbox"/>
	Anticoagulant reversal (only if ongoing hemorrhage): <input type="checkbox"/> If Xa inhibitors (second dose): consultation with hematologist recommended	<input type="checkbox"/>
	<input type="checkbox"/> Calcium: 20 mg/kg (max 1 g) Calcium Chloride or 60 mg/kg (max 3 g) Calcium Gluconate iv push after pack 2 or ionized calcium <1.15 mmol/L	<input type="checkbox"/>
PACK 3 (Arrival time __/__/__)		
	<input type="checkbox"/> Obtain hour 2 blood work	
	<input type="checkbox"/> Review last set of blood work to ensure at target including blood glucose > 4 mmol/L , ionized calcium ≥ 1.15 mmol/L & potassium < 5.8 mmol/L	<input type="checkbox"/>
	<input type="checkbox"/> Measure and document patient temperature <input type="checkbox"/> If patient temperature less than 36°C start active warming	
	Obtain 3rd MHP pack (if needed) Transfusions based on laboratory measures where feasible <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 4 Units Red Blood Cells [# units dependent on the patient's body weight (kg); 20 ml/Kg per dose, unless laboratory results direct otherwise)] <input type="checkbox"/> Prothrombin Complex Concentrate 25 IU/kg (round to closest 500 IU) max 2000 IU <input type="checkbox"/> Fibrinogen concentrate 50 mg/kg (max dose 4 g if > 30 kg; max dose 2 g if < 30 kg) over 5 min by iv push	<input type="checkbox"/> <input type="checkbox"/>
	<input type="checkbox"/> Platelets (if available): if platelet count < 50 x10 ⁹ /L, 10 mL/kg of pooled platelets	<input type="checkbox"/>
	<input type="checkbox"/> Calcium: 20 mg/kg (max 1 g) Calcium Chloride or 60 mg/kg (max 3 g) Calcium Gluconate iv push after pack 3 or ionized calcium <1.15 mmol/L	<input type="checkbox"/>

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TERMINATION (time __/__/__)	
<input type="checkbox"/>	Once <u>either</u> hemorrhage control is obtained and patient is hemodynamically stable call blood bank and the hematology laboratories to terminate the protocol <u>or</u> patient has been transferred to tertiary centre for definitive hemorrhage control
<input type="checkbox"/>	Measure and document patient temperature
<input type="checkbox"/>	Return all unused blood products in appropriate storage containers
<input type="checkbox"/>	Complete this form and place in patient chart
<input type="checkbox"/>	Complete handover SBAR tool below with transport team

HANDOVER SBAR TOOL FOR HANDOVER TO THE TRANSPORT TEAM
 (Time __/__/__)

S: SITUATION (Relay the following)	HANDOVER NOTES
<input type="checkbox"/> Patient age, sex, weight	
<input type="checkbox"/> Patient estimated blood volume (70 ml/kg) _____ L	
<input type="checkbox"/> Context (trauma ± TBI, surgery, or other)	
B: BACKGROUND (Relay the following)	
<input type="checkbox"/> TXA administration _____ grams	
<input type="checkbox"/> Total volume (ml-unless specified) of blood products ____ RBC ____ PLTs ____ g Fibrinogen ____ IU PCC	
<input type="checkbox"/> Total (L) crystalloid and/or colloid and urine output _____ L of non-blood product fluid; _____ L of urine output	
<input type="checkbox"/> IV / IO access and need for vasopressors	
<input type="checkbox"/> For trauma, external/internal bleeding ± TBI management	
<input type="checkbox"/> Consultant(s) involved (e.g., surgery, radiology or gastroenterology)	
<input type="checkbox"/> Complications (hypothermia, coagulopathy, acidosis or arrhythmias)	
A: ASSESSMENT (Relay the following)	
<input type="checkbox"/> Hemodynamic status (stable or unstable, vitals and temperature)	
<input type="checkbox"/> Blood products prepared for transport	
<input type="checkbox"/> Critical labs (specify) and latest blood work results Hgb _____ PLT _____ INR _____ Fibrinogen _____ Lactate _____ Calcium _____	
R: RECOMMENDATION (Consider the following)	
<input type="checkbox"/> Consider need for additional blood products during transport	
<input type="checkbox"/> Consider need for drug re-dosing during transport	