

# Massive Haemorrhage Management Flowchart

(Child 1 month - 16yrs) NB >60kg use adult guideline OR <10kg use mls/kg

**MHP Activation:** ☎ 2222

- Nominate roles
- Distribute action cards
- Assess patient

**Call Blood Bank**

*Normal hours*  
**RSH** ☎ 3542/3556  
**PRH** ☎ 4305/4306  
 17.30-9.00 (+ weekends & BH)  
**RSH** bleep 512  
**PRH** bleep 115

- Identify biomedical scientist
- Give patient details
- State urgency for XM (30min group specific v 60min full XM)

**Check availability and location of emergency O neg red cells:**

- Consider use of O neg only if life threatening haemorrhage

Ratio of FFP:RBC should be in range of 1:2 to 1:1

**SUSPECT MASSIVE HAEMORRHAGE:**  
 Significant mechanism of injury, severe significant bleeding, clinical shock  
**Administer Tranexamic Acid**  
**Loading dose: 15mg/kg (max 1g) diluted in 10ml of 0.9% Saline as IV bolus over 10mins**  
**Maintenance infusion: 2mg/kg/hr (max 1g) for 8 hours or until bleeding stops (suggested dilution 500mg in 500mls of 0.9% Sodium Chloride)**  
**IF > 12 years USE ADULT DOSING i.e. LOADING 1g AND MAINTENANCE 1g OVER 8 HOURS**

**Activate Paediatric Massive Haemorrhage Pathway**  
 Age of child to wt calculation ~ as per current protocol

**Call for help: 2222**  
 "Massive Haemorrhage, Speciality, Location"  
**Team collect action cards**  
**Secure IV/IO access and ensure ID band**  
**INFORM CONSULTANT**

**RESUSCITATE**  
 Airway  
 Breathing  
 Circulation

**STOP THE BLEEDING**

**Take bloods**  
 XM, FBC, PT, APTT, fibrinogen, U+E, Ca<sup>2+</sup>, ABGs & lactate  
**Order Massive Haemorrhage Pack 1**

Weight Kg	<10	10-20	21-40	41-60	>60
Red cells*	20ml/kg	1 unit	2 units	3 units	ADULT
FFP	15ml/kg	1 unit	2 units	2 units	ADULT

(\*Emergency O neg blood, group specific or XM blood)  
 (FFP if stored at 4°C extends use to 24hours)

**Goals of therapy**

Hb	80-100g/l
Platelets	>75 x 10 <sup>9</sup> /l
PT ratio	< 1.5
APTT ratio	<1.5
<b>Fibrinogen</b>	<b>&gt;1.5g/l</b>
<b>Ca (ironised)</b>	<b>&gt;1 mmol/l</b>
<b>Temp</b>	<b>&gt; 36°C</b>
<b>pH</b>	<b>&gt; 7.35</b>

**MONITOR POTASSIUM**

**Consider:**  
**Haemorrhage Control**  
 • Direct pressure / tourniquet if appropriate  
 • Stabilise fractures  
 • Surgical intervention – consider damage control surgery  
 • Endoscopic techniques  
 • Obstetric techniques  
**Interventional radiology**  
**Cell salvage if available and appropriate** Consider ratios of other components:

**Give MHP 1**

**Prevent Hypothermia**  
 Use fluid warming device  
 Use forced air warming blanket or under warming device

**Reassess**  
 Suspected continuing haemorrhage:  
**Repeat bloods**  
 XM, FBC, PT, APTT, fibrinogen, U+E, Ca<sup>2+</sup>, ABG & lactate  
**Consider whether all surgical measures have been undertaken**

**GIVE 0.2 mls/kg Calcium Chloride 10% over 10 minutes**

**Haemostatic Drugs**  
**Vitamin K & Prothrombin Complex Concentrate (Octoplex).**  
**Other haemostatic agents & reversal of new anticoagulants,** discuss with Consultant  
 Haematologist ☎ via switchboard

**Order Massive Haemorrhage Pack 2**

Weight Kg	<10	10-20	21-40	41-60	>60
Red cells*	20ml/kg	1 unit	2 units	3 units	ADULT
FFP	15ml/kg	1 unit	2 units	2 units	ADULT
Platelets**	10ml/kg	1 unit	1 unit	1 unit	ADULT

(\*\*May need to come from B'ham as not stocked)  
**Give 2 packs Cryoprecipitate if fibrinogen <1.5g/l**

**GIVE 5ml/kg cryoprecipitate if fibrinogen < 1.5g/l**

**Continuous ECG monitor**

**STAND DOWN**  
 Inform lab ☎ see top left contactsb  
 \* Track all blood units  
 \* Return unused components  
 \* Complete documentation/audit

**Give MHP 2**

**FFP will be supplied as Octaplas (SD-treated, prion)**

**Re-assess, Repeat bloods**  
 XM, FBC, PT, APTT, fibrinogen, UE, Ca<sup>2+</sup>, ABG, lactate