PAEDIATRIC MAJOR HAEMORRHAGE PROTOCOL

Rapid blood loss with shock or with no likelihood of control.
Anticipated or actual blood loss of 80mls/kg in 24 hours,
40 mL/Kg in 3 hours or 2-3mls/kg/min

FOR USE IN CHILDREN under 50Kg
For larger children - use adult protocol

Call **2222.** State "Paediatric **Major Haemorrhage**". Give Hospital and **Location**

Nominated blood monitor MUST CONTACT Blood Transfusion with the following:

1. Patient Identification
2. Approximate weight of child
3. Patient Location
4. Name and contact details of nominated blood monitor for on-going communication
5. Cause of bleeding (if known)
6. Confirm Group & Screen, Full Blood Count & Coagulation Screen samples are sent to laboratories
   Consider using paediatric blood bottles

Call the Blood Transfusion Laboratory

24 hours a day Ext. 22043
Out of hours Bleep 1611

The Blood Transfusion Laboratory will issue:

20ml/kg O negative RBC & **20ml/kg FFP**
Or
20ml/kg group specific* RBC & **20ml/kg FFP**
(*if valid sample in Laboratory. If no valid samples continue to issue emergency blood)

Clinicians to administer Tranexamic Acid (except in GI bleeds)

Once these components are collected from the laboratory:
The laboratory will continue to issue until stood down from MHP:

20ml/kg RBC
20ml/kg FFP
10ml/kg Cryoprecipitate
15ml/kg Platelets (up to 1 pack)

After 80ml/kg RBC consider:

Fibrinogen Concentrate (50mg/kg)
Recombinant Factor VIIa (in discussion with Haematology medical team)

Porters:

- Report to Transfusion Lab to collect blood, then to ward, except for:
- A+E at SMH & CXH: Report to A+E whereby staff will tell porters when to collect blood components
- Porters ext. 25293 at SMH

Availability of Blood Components For Collection

Packed Red Blood Cells
Immediately available

Pre-thawed
Fresh Frozen Plasma
Immediately available

Cryoprecipitate
30 minutes to thaw

Platelets
Immediately available

The clinical area will:

1. **Nominate two blood monitors to ensure effective management of blood components and communicate with the transfusion laboratory staff**
2. Send full blood count & coagulation screen samples as a baseline
3. Send repeat group & screen sample if requested
4. Discuss on-going management including authorisation of other clotting factors with the Haematology medical team (via Switchboard if contact details not known)
5. Inform the Blood Transfusion Laboratory when **STOOD DOWN**

PAEDIATRIC MAJOR HAEMORRHAGE ALGORITHM (<50KG)

Estimate weight
(age+4) x 2

Pre-hospital "Paediatric Code Red" declared?

Yes

No

Life-threatening haemorrhage?

Yes

No

Continue assessment of child

Activate Paediatric Major Haemorrhage Protocol

Transfuse **10 ml/kg** boluses:

- Up to 20 ml/kg **blood**
- Up to 20 ml/kg **FFP**

Administer:

- 10% **CaCl** 0.1 ml/kg
- **Tranexamic acid** 15mg/kg (max 1g) followed by infusion of 2nd dose

Take bloods:

- **Blood gas**
- **TEG**
- **Cross match**
- FBC, clotting, fib
- U+E

Ongoing haemorrhage?

Yes

No

Transfuse (1:1:1:1):

- **10 ml/kg blood**
- **10 ml/kg FFP**
- **10 ml/kg cryoppte**
- (max 2 pooled units)
- **15 ml/kg platelets** (max 1 adult pool)

Administer:

- 10% **CaCl** 0.1 ml/kg

Repeat bloods every one hour **minimum**:

- Blood gas
- TEG

Deactivate Paediatric Major Haemorrhage Protocol

Stop the bleeding

- Direct pressure
- Tourniquet
- Pelvic binder, limb splints
- Damage control surgery
- Interventional radiology

- Nominate two senior blood monitors
- Send porter to collect blood products urgently
- Liaise with lab regularly

Delivery method

- <20 kg Ranger fluid warmer + syringe
- ≥20 kg Belmont rapid infuser

Risks

- Hypothermia
- Hypocalcaemia
- Acidosis
- Coagulopathy inc ↓ Fib
- Hyperkalaemia

Aims

Fib	**> 2 g/l**
iCa^{2+}	**> 1.2 mmol/l**
Hb	≥ 8 g/dl
Plt	> 100 x10^9/l
INR	< 1.5
APTR	< 1.5
pH	> 7.30
Tº	> 36° C

After 80 ml/kg of blood consider:

- Fibrinogen Concentrate 50 mg/kg
- Recombinant Factor VIIa in discussion with haematologist