

# 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**

## 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?

## 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<sup>2+</sup> > 1.2 mmol/l

Hb ≥ 8 g/dl  
Plt > 100 x10<sup>9</sup>/l  
INR < 1.5  
APTR < 1.5  
pH > 7.30  
T° > 36° C

## After 80 ml/kg of blood consider:

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

No

Life-threatening haemorrhage?

No

Continue assessment of child

Yes

Yes

**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 2<sup>nd</sup> dose

Take bloods:

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

Ongoing haemorrhage?

Yes

Repeat bloods every one hour **minimum:**

- Blood gas
- TEG

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

No

**Deactivate Paediatric Major Haemorrhage Protocol**