KKH Paediatric Massive Transfusion Protocol (MTP)
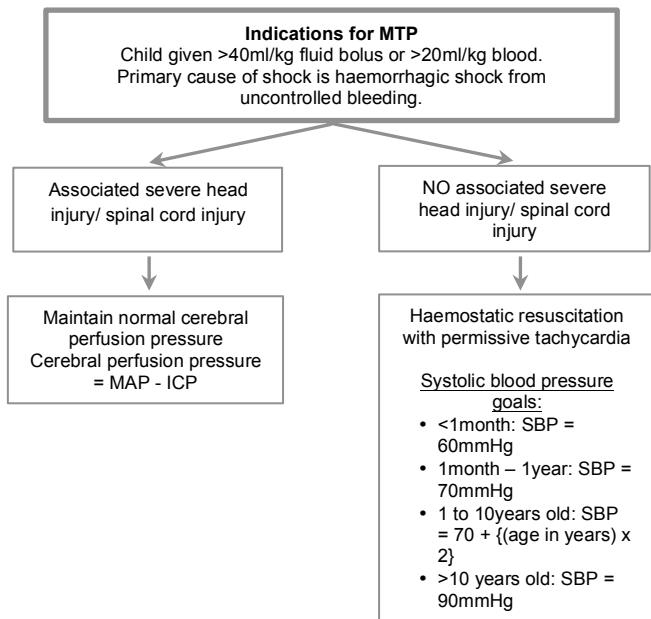
Massive transfusion in children is defined as transfusion of >40ml/kg (blood volume in children >1month old is approximately 80ml/kg)

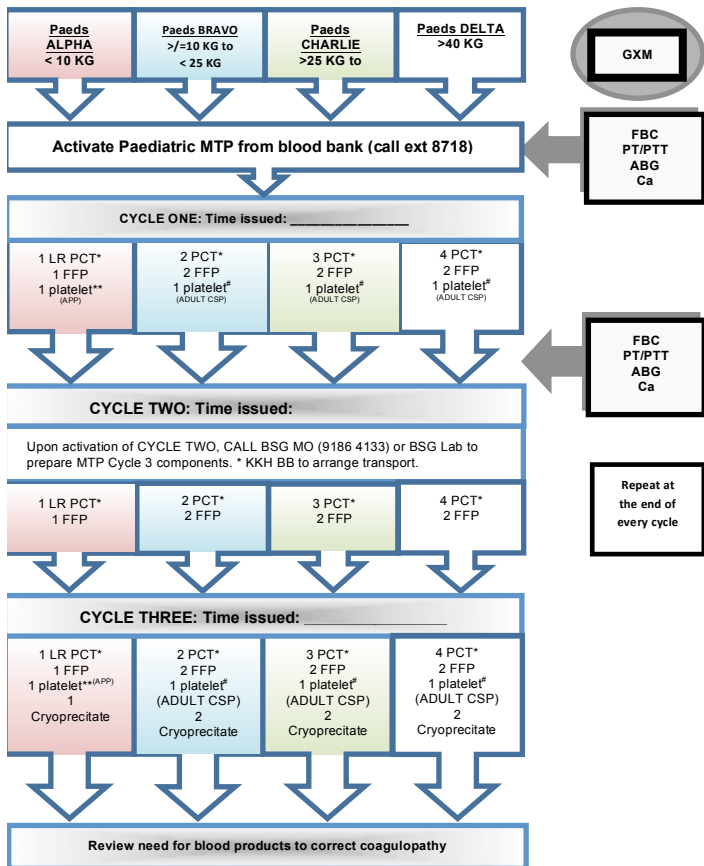MTP hotline to KKH blood bank: dial extension **8718** (only from CE/ CICU/ OT/ Angio suite).

See below for MTP activation chart.

Indications for MTP
Child given >40ml/kg fluid bolus or >20ml/kg blood.
Primary cause of shock is haemorrhagic shock from uncontrolled bleeding.

Associated severe head injury/ spinal cord injury

NO associated severe head injury/ spinal cord injury

Maintain normal cerebral perfusion pressure
Cerebral perfusion pressure = MAP - ICP

Haemostatic resuscitation with permissive tachycardia

Systolic blood pressure goals:
- <1month: SBP = 60mmHg
- 1month – 1year: SBP = 70mmHg
- 1 to 10years old: SBP = 70 + {(age in years) x 2}
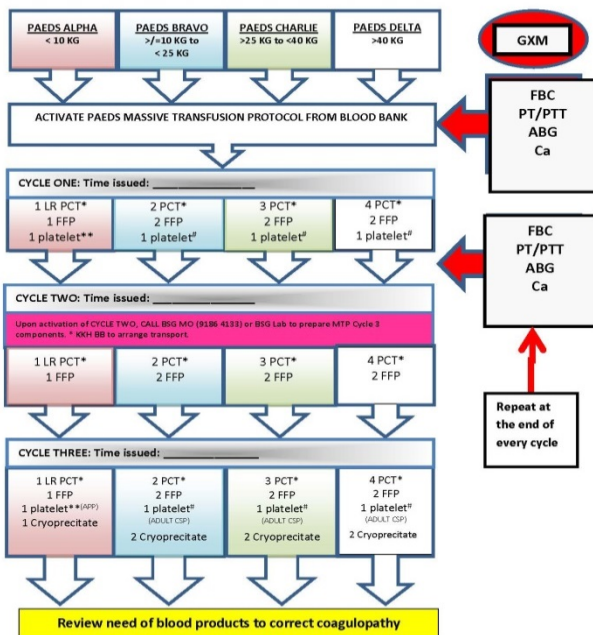- >10 years old: SBP = 90mmHg

Monitor for:

1. Temperature >35 and treat hyperthermia aggressively
2. Treat hypotension aggressively in children with head injury or spinal cord injury
3. Platelets
   - Keep platelets $\geq 50 \times 10^9$/L if NO significant head injury present
   - Keep platelets $\geq 100 \times 10^9$/L in presence of significant head injury
4. Blood gases/ electrolytes
   - pH >7.2
   - Base excess < –6
   - Ca 2+ > 1.1mmol/L
   - Monitor for hyperkalemia
5. Coagulation profile
   - PT/ aPTT < 1.5x normal
   - INR ≥1.5
6. Fibrinogen >1g/L
7. Lactate < 3mmol/L

Paeds **ALPHA** < 10 KG	Paeds **BRAVO** >/=10 KG to < 25 KG	Paeds **CHARLIE** >25 KG to	Paeds **DELTA** >40 KG

GXM

Activate Paediatric MTP from blood bank (call ext 8718)

FBC
PT/PTT
ABG
Ca

CYCLE ONE: Time issued: _____

1 LR PCT* 1 FFP 1 platelet** (APP)	2 PCT* 2 FFP 1 platelet# (ADULT CSP)	3 PCT* 2 FFP 1 platelet# (ADULT CSP)	4 PCT* 2 FFP 1 platelet# (ADULT CSP)

FBC
PT/PTT
ABG
Ca

CYCLE TWO: Time issued:

Upon activation of CYCLE TWO, CALL BSG MO (9186 4133) or BSG Lab to prepare MTP Cycle 3 components. * KKH BB to arrange transport.

Repeat at the end of every cycle

1 LR PCT* 1 FFP	2 PCT* 2 FFP	3 PCT* 2 FFP	4 PCT* 2 FFP

CYCLE THREE: Time issued: _____

1 LR PCT* 1 FFP 1 platelet**(APP) 1 Cryoprecitate	2 PCT* 2 FFP 1 platelet# (ADULT CSP) 2 Cryoprecitate	3 PCT* 2 FFP 1 platelet# (ADULT CSP) 2 Cryoprecitate	4 PCT* 2 FFP 1 platelet# (ADULT CSP) 2 Cryoprecitate

Review need for blood products to correct coagulopathy

MTP (Paeds) Workflow Sheet (For Blood Bank Use)

Affix Patient's Label	Name of Doctor: _____
	Clinical Area: CE / CICU / OT / HD (circle 1)
	Extension No.:_____
Date & Time of specimen received: _____	Dial **8718** for
Date & Time of activation: _____	MTP activation **ONLY**

| PAEDS ALPHA < 10 KG | PAEDS BRAVO >/=10 KG to < 25 KG | PAEDS CHARLIE >25 KG to <40 KG | PAEDS DELTA >40 KG | | GXM |

ACTIVATE PAEDS MASSIVE TRANSFUSION PROTOCOL FROM BLOOD BANK ← FBC PT/PTT ABG Ca

CYCLE ONE: Time issued: _____

| 1 LR PCT* 1 FFP 1 platelet** | 2 PCT* 2 FFP 1 platelet# | 3 PCT* 2 FFP 1 platelet# | 4 PCT* 2 FFP 1 platelet# | ← FBC PT/PTT ABG Ca |

CYCLE TWO: Time issued: _____

Upon activation of CYCLE TWO, CALL BSG MO (9186 4133) or BSG Lab to prepare MTP Cycle 3 components. * KKH BB to arrange transport.

| 1 LR PCT* 1 FFP | 2 PCT* 2 FFP | 3 PCT* 2 FFP | 4 PCT* 2 FFP |

Repeat at the end of every cycle

CYCLE THREE: Time issued: _____

| 1 LR PCT* 1 FFP 1 platelet**(APP) 1 Cryoprecitate | 2 PCT* 2 FFP 1 platelet# (ADULT CSP) 2 Cryoprecitate | 3 PCT* 2 FFP 1 platelet# (ADULT CSP) 2 Cryoprecitate | 4 PCT* 2 FFP 1 platelet# (ADULT CSP) 2 Cryoprecitate |

Review need of blood products to correct coagulopathy

For CE/CICU/OT

Affix Patient Label

Paeds MTP Response Time

Date: _____

Time of code activation: _____ h

Name of doctor activating: _____

Diagnosis: _____

Most senior surgeon present: _____ /NA

Most senior anaesthetist present: _____ /NA

Time at 1st MTP Pack **RECEIVED**:   Time at 1st MTP Pack **ADMINISTRATED**:

PCT _____ h   PCT _____ h

FFP _____ h   FFP _____ h

PLT _____ h   PLT _____ h

Time of code Cessation: _____ h

Name of staff who informed cessation time: _____

Discharge status within 24 hours : Alive / Dead

Discharge status after 24 hours: Alive/ Dead

Wastage of blood product(s) : Yes/ No

Instructions for staff:
1. Send a duplicate copy to Blood Bank attention to MTP in charge via internal mail
2. For CE/CICU, file the original copy in the patient casenotes for trauma coordinator to collect
3. For OT, trauma coordinator to collect the duplicate form from AU NM in charge