What is the Massive Transfusion Protocol (MTP)?

- Provision and mobilisation of large amounts of blood product to a critically bleeding child.
- Clear guidelines for the multidisciplinary team caring for the critically bleeding child.
  - Trauma Doctors
  - Trauma nurses
  - Haematologist staff
  - Laboratory staff
  - Distribution PSA’s
Why do we need a MTP?

• Provides certainty to clinical staff managing a bleeding patient.
• Activates a response within our Blood Bank and notifies The Blood Service.
  • Increasing staffing in the Blood Bank
  • Commencement of thawing of frozen components
  • Ordering of urgent blood from The Blood Service

A comprehensive response to Major Bleeding

• Treating Haemorrhage and Coagulopathy of Trauma by
  • Replacing ‘blood’
    • Red Cells: increase oxygen carrying capacity
    • Plasma: Replace clotting factors
    • Platelets: replace platelets
  • Reduction in hypothermia related coagulopathy
    • Provision of warmed components
What is “critical bleeding” in a child?

• Defined as “major haemorrhage that is life threatening and likely to result in the need for massive transfusion”

What is a “massive transfusion” in a child?

• Greater than 40mls/kg in blood

Massive transfusion protocol
Initial phase: Assessment/ Allocation

- Credible pre-hospital information
- On arrival assessment
- 2 options:
  - Red Cells Only
  - Massive Transfusion Protocol

### Allocation of roles in trauma

- Team leader
- Circulation Doctor
- Circulation Nurse
- Trauma PSA for collection of blood products from Blood Bank

### Assessment:

- What is the patient’s:
  - Weight (approx)
  - Gender
- What are the patient’s:
  - Injuries

### Pathology testing:

- Group and Antibody screen
- FBE, Coags, ABG/CAB
Pretransfusion specimens

• Must have a patient label
• Sign date and time the tube
• Sign date and time declaration
• Dr contact details in case of error

Why do we need a sample?

• Prior to transfusion all patients should have a pre transfusion sample.
• To ensure there is a group on record despite provision of O Negative Blood.
• To reduce the use of emergency O Negative blood in patients who don’t require it.
• To ensure group specific blood can be made available ASAP.
What’s in an Massive Transfusion Pack?

<table>
<thead>
<tr>
<th>MTP 1</th>
<th>≤ 20kg</th>
<th>20-40kg</th>
<th>40-60kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Cells</td>
<td>2 units</td>
<td>4 units</td>
<td>6 units</td>
</tr>
<tr>
<td>FFP</td>
<td>2 units of FFP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTP 2</td>
<td>Repeat MTP 2 until deactivated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red cells</td>
<td>2 units</td>
<td>4 units</td>
<td>6 units</td>
</tr>
<tr>
<td>FFP</td>
<td>2 units</td>
<td>4 units</td>
<td>6 units</td>
</tr>
<tr>
<td>Platelets</td>
<td>1 pack</td>
<td>1 pack</td>
<td>1 pack</td>
</tr>
<tr>
<td>Cryo</td>
<td>As directed by haematologist</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other steps

After the request has been made:
- MTP packs will be delivered as available.
- Liaise with the on-call Haematologist.
- Blood samples should be collected at the end of each MTP pack.
- This will be repeated until the MTP is over.
Stopping the MTP

- When the patient moves
  - Inform the blood bank
- IF the MTP is stopped
  - Inform the blood bank

Circulation Nurse Responsibilities:

Task:
- Ensure patient is wearing a patient identification label
- Set up of giving sets and/or rapid infuser
- Maintain clear records of blood products administered
- Check and commence all blood products
- Keep all empty blood bags.

Example:
- Stick a patient bradma to the patients forehead or other skin surface easily visualised.
- Trauma fluid balance charting
Trauma fluid balance trial

Order of blood products

- After discussion with Circulation Doctor
  - Depends on number of access points
  - Clinical condition
  - Multiple access points run concurrently
  - Single access point (and depending on condition) Red cells, FFP, Platelets and Cryo
  - Platelets always need their own filter, or line preferably
Maintain the records

- The nurse must keep a tally of all product administered.
- Each bag has the name of the product and
- The mls in the bag.

Providing real time information for the team leader.

- In a Massive Transfusion the team leader or circulation doctor need to update the haematologist regarding:
  - Products received
  - Clinical assessments (vital signs, type of bleeding, other injuries)
  - Pathology collected/ to be collected
Notify of transfer or end of MTP.

- Blood bank
- Haematologist

Further questions

- Call Nicole 56561 or page 6562
- Call Blood Bank 55830 or 55829
- Call on call Haematologist 91
- Go to Massive Transfusion Webpage