Network(s)

Midlands Trauma Networks

Publication:

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Document purpose: This document contains the standards for all receiving units in the Midlands Trauma Networks in respect of Major Haemorrhage in trauma

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Document status:

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Scope

This document sets out the standards for all receiving units in the Midlands Trauma Networks in respect of Major Haemorrhage in trauma. <u>These are now the preferred adult and paediatric guidelines/flowcharts for all units.</u>

Introduction

The timely provision of tranexamic acid and blood products to major trauma patients is associated with improved outcomes. Evidence suggests that using a high ratio of Plasma (FFP/Octaplas) and platelets to packed red cells (PRC) reduces coagulopathy and overall blood use. Recent publications and consensus guidance has strengthened the recommendation for a PRC to plasma ratio of 1:1 and this should be adopted for all major trauma major haemorrhage protocols. It is recognized that major trauma bleeding *may be* different from other sorts of bleeding so providers may need two MHP protocols, one for major trauma and one for other bleeding scenarios.

Protocol

- 1. Every receiving unit should have a clearly defined adult and paediatric major haemorrhage protocol for trauma approved by the local blood transfusion committee.
- 2. Within the protocol there should be clear guidance on the following:
 - a. Activation criteria and method of activation

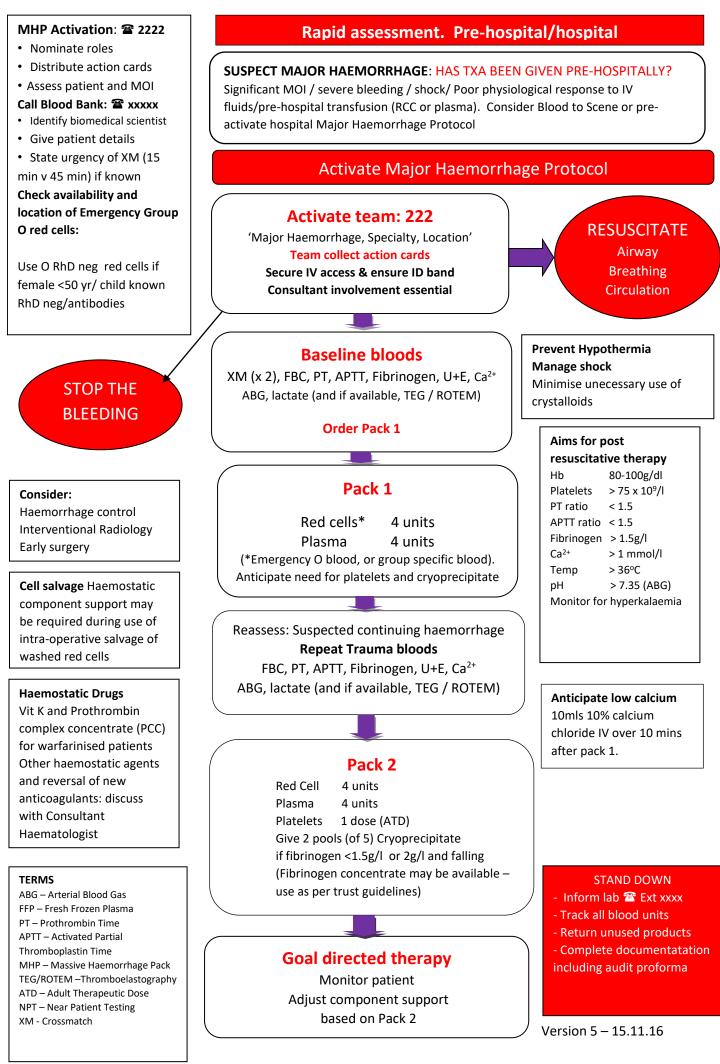
- b. The roles and responsibilities of the personnel involved
- c. The ratio of packed cells to plasma which should be 1:1
- d. Clear guidance on products to use in persons known or suspected to have been born after 1996.
- e. Adult Major Trauma Centre's should maintain a stock of pre-thawed plasma for immediate use
- f. The ratio of packed red cells to platelet transfusion
- g. What products should be used pre-cross matching, specifically scenarios in which Group O Rh D +ve blood may be used.
- h. The communication mechanism between clinicians and the labs
- i. The availability and method of communicating with the on call haematology consultant.
- j. The stand down criteria,
- 3. Every receiving unit must have clear guidance on the reversal procedure for oral anticoagulants including Warfarin and direct oral anticoagulants e.g. rivaroxaban, dabigatran, apixaban.
- 4. Every receiving unit must have facilities for in line warming of blood products immediately available within the resuscitation room.
- 5. Every receiving unit should have evidence that the activations of the major haemorrhage protocol are monitored and audited.
- 6. Every receiving unit should have Tranexamic Acid immediately available in the resuscitation room.
- 7. The time and dose of Tranexamic Acid administration must be recorded on the trauma chart.

References

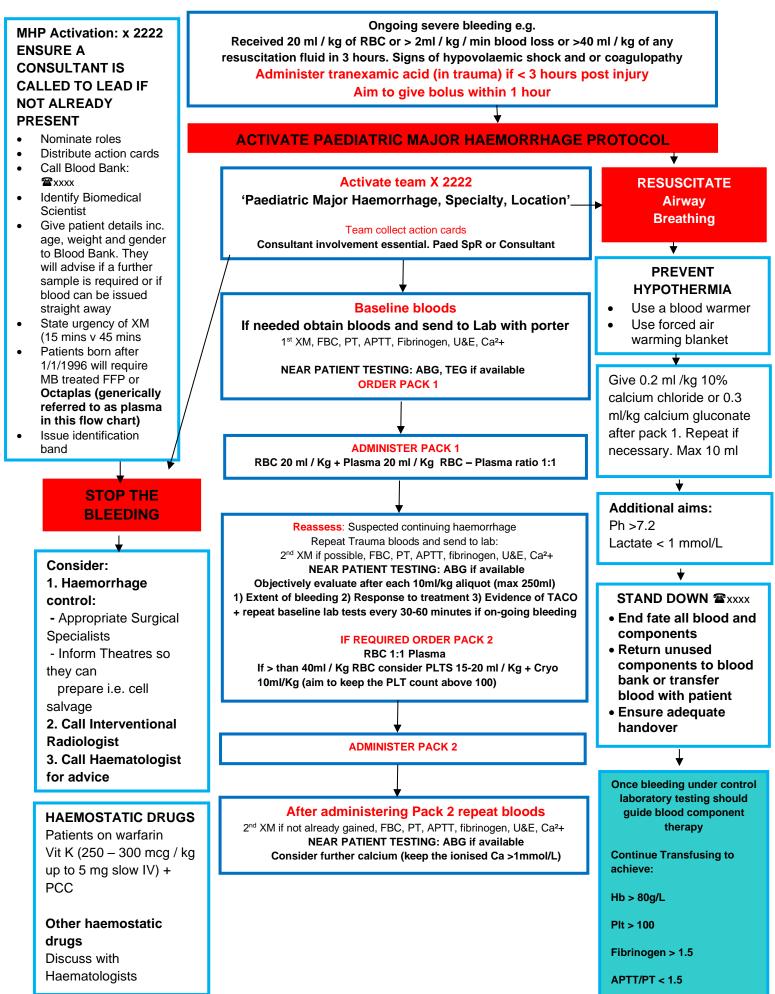
- Hunt BJ, Allard S, Keeling D *et al.* A practical guideline for the haematological management of major haemorrhage. *British Journal of Haematology* 2015; **170**: 788-803.
- National Institute for Health and Care Excellence (NICE). Blood transfusion. *NICE Guideline* 2015; nice.org.uk/guidance/ng24.
- Padhi S, Kemmis-Betty S, Rajesh S, Hill J, Murphy MF, On behalf of the Guideline Development Group. Blood transfusion: summary of NICE guidance. *British Medical Journal* 2015; **351 doi:** 10.1136/bmj.h5832 (Published 18 November 2015).
- NICE guidelines [NG39]. Major trauma: assessment and initial management. https://www.nice.org.uk/guidance/ng39 2016.
- Holcomb JB, del Junco DJ, Fox EE *et al*. The Prospective, Observational, Multicenter, Major Trauma Transfusion (PROMMTT) Study. Comparative Effectiveness of a Time-Varying Treatment With Competing Risks. *Journal of the American Medical Association Surgery* 2013; **148**: 127-36.
- Holcomb JB, Tilley BC, Baraniuk S *et al.* Transfusion of Plasma, Platelets, and Red Blood Cells in a 1:1:1 vs a 1:1:2 Ratio and Mortality in Patients With Severe Trauma: The PROPPR Randomized Clinical Trial . *The Journal of the American Medical Association* 2015; **313:** 471-82.

See below for flowcharts

Adult Major Haemorrhage in Trauma Management Flowchart



Paediatric Major Haemorrhage in Trauma Management Flowchart



Blood Components to request by weight				
	20ml / kg	20ml / kg	15-20 ml / kg	10ml / kg
WEIGHT	RBC	Plasma	PLTS	CRYO
< 5 kg	80-100 ml	80-100 ml	50-80 ml	50 ml
5-10.9 kg	1 unit	1 unit	100 ml	80 ml
11-20 kg	2 units	2 units	1 unit	1 pool
20-50 kg	3 units	3 units	1 unit	2 pools
>50 kg	4 units	4 units	1 unit	2 pools

90ml /kg in term infants and 70-80 ml/kg in adolesence