Adult Massive Haemorrhage Management Flowchart

(>60kg patients)

MHP Activation:☎ 2222
- Nominate roles
- Distribute action cards
- Assess patient

Call Blood Bank
Normal hours
RSH ☎ 3542/3556
PRH ☎ 4305/4306
17.30-9.00 (+ weekends & BH)
RSH bleep 512
PRH bleep 115
- Identify biomedical scientist
- Give patient details
- State urgency for XM (30min group specific v 60min full XM)

Check availability and location of emergency O neg red cells:
- Consider use of O neg only if life threatening haemorrhage

SUSPECT MASSIVE HAEMORRHAGE: mechanism of injury/ Patient bleeding / Collapses
On-going severe bleeding eg: 150mls/min and clinical shock
Administer Tranexamic Acid – aim to give bolus within 1 hour
(1g in 10ml bolus followed by 1g in 1000ml infusion over 8 hours)

Activate Massive haemorrhage Pathway

Call for help: 2222
'Massive Haemorrhage, Specialty, Location'
Team collect action cards
Secure IV/IO access and ensure ID band
Consultant involvement essential

RESUSCITATE
Airway
Breathing
Circulation

Take bloods and send to lab
XM, FBC, PT, APTT, fibrinogen, U+E, Ca^{2+}
NPT: ABG, lactate if available
Order Massive Haemorrhage Pack 1
Red cells* 4 units
FFP 2 units
(*Emergency O neg blood), group specific or XM blood depending on availability)
***keep platelets at room temperature**
(FFP if stored at 4°C extends use to 24hours)

Give MHP 1

Reassess
Suspected continuing haemorrhage:
Take bloods and send to lab
FBC, PT, APTT, fibrinogen, U+E, Ca^{2+}
NPT: ABG, lactate if available
Consider, -Have all surgical measures been undertaken?

Order Massive Haemorrhage Pack 2
Red cells* 4 units
FFP 2 units
Platelets 1 unit (ATD)
and subsequently
Give 2 packs Cryoprecipitate if fibrinogen <1.5g/l

Give MHP 2

After MTP, repeat bloods:
FBC, PT, APTT, fibrinogen, U+E, Ca^{2+}
NPT: ABG, lactate if available

Prevent Hypothermia
Use fluid warming device (eg Belmont level 1 infuser)
Use forced air warming blanket or under warming device

Give 10 mls Calcium chloride 10% over 10 mins

Give 2 packs **cryoprecipitate if fibrinogen < 1.5g/l** (<2g/l in obstetric haemorrhage)

Aims for therapy

Hb	8-10g/dl
Platelets	>75 x 10^9/l
PT ratio	< 1.5
APTT ratio	<1.5
Fibrinogen	>1.5g/l
Ca (ironised)	>1 mmol/l
Temp	> 36°C
pH	> 7.35 (on ABG)

Monitor for hyperkalaemia

Continuous cardiac monitoring (& pH)

STOP THE BLEEDING

Consider:
Haemorrhage Control
- Direct pressure / tourniquet if appropriate
- Stabilise fractures
- Surgical intervention – consider damage control surgery
- Endoscopic techniques
- Obstetric techniques

Interventional radiology

Cell salvage if available and appropriate Consider ratios of other components:

Haemostatic Drugs
Vit K and Prothrombin complex concentrate (PCC) for warfarinised patients

Other haemostatic agents and reversal of new anticoagulants: discuss with Consultant Haematologist ☎ via switch board

Ratio of FFP:RBC should be in range of 1:2 to 1:1

STAND DOWN
Inform lab
☎ see top left contacts box
*Track all blood units
* Return unused components
* Complete documentation
Including audit proforma

XM - Crossmatch
PT- Prothrombin Time
ATD- Adult Therapeutic Dose

APTT – Activated partial thromboplastin time
FFP- Fresh Frozen plasma

NPT – Near Patient Testing
ABG – Arterial Blood Gas
MH – Massive Haemorrhage

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*Source: **Midlands Trauma Networks***