

# Major haemorrhage in adults

≥ 40% loss of total blood volume

4 litres in 24 hours      2 litres in 3 hours      > 150ml/min

**Contact Transfusion Laboratory**  
Important phone numbers

**Get senior help**  
Contact senior member of clinical team.  
Contact senior ward nurses Contact portering services  
Contact Transfusion

Ask Transfusion to **'initiate major haemorrhage protocol'**

**Assess ABC**  
**IV access**  
Check patient identification  
2 large cannula  
Send blood samples, cross-match, FBC, coagulation, biochemistry  
Consider arterial blood gas measurement

**Resuscitate**  
IV warm fluids – crystalloid or colloid  
Give oxygen

**Blood loss >40% blood volume**  
• 1500–2000mls loss  
**MH may manifest as**  
• Pulse > 110, RR > 30  
• Hypotensive in trauma systolic BP<90 mmHg  
• Urine < 20mls/h

**Before transfusion**  
• Check patient ID  
• Use wristbands

**Give blood**  
Blood loss >40% blood volume is immediately life-threatening  
Give 4 units via fluid warmer. Aim for Hb>80g/l  
Give Group O if immediate need and/or blood group unknown

When laboratory results available	
IF	GIVE
Falling Hb	Red cells
APTT and/or PT ratio >1.5	FFP 15–20ml/kg
Fibrinogen <1.5g/l and obstetrics <2g/l	Cryoprecipitate (2 pools)
Platelet count <50 x 10 <sup>9</sup> /l	Platelets 1 adult dose order at 100 x 10 <sup>9</sup> /l

**Primary MH pack**  
• RBC 5 units  
• FFP 4 units  
Alternate RBC and FFP and aim for RBC:FFP ratio 2:1

**Prevent coagulopathy**  
Anticipate need for platelets and FFP after 4 units blood replacement and continuing bleeding  
Give Primary Major Haemorrhage (MH) Pack  
Order Secondary Major Haemorrhage (MH) Pack  
Correct hypothermia  
Correct hypocalcaemia (keep ionised Ca >1.13mmol/L)  
Send FBC and coagulation samples after every 3–5 units of blood given  
Give tranexamic acid for trauma patients and consider it's use in non traumatic bleeding  
Dose: 1g iv over 10 minutes then 1g over 8 hours  
Contact Haematologist

**Secondary MH pack**  
• RBC 5 units  
• FFP 4 units  
• Platelets  
• Cryoprecipitate

If bleeding continues repeat secondary pack

**Trauma Primary MH pack**  
• RBC 5 units  
• FFP 4 units  
• Platelets 1 unit  
Aim for RBC:FFP of 1:1

Contact surgeons, gastroenterologists, obstetricians as appropriate

Reassess and document

**Get help to stop bleeding**