Antepartum Haemorrhage
Guideline for Management

University Hospitals of Leicester NHS
NHS Trust

1. Introduction and who the guideline applies to:

This guideline is for the use of all staff involved in the management of women with an Antepartum Haemorrhage. This includes midwifery, obstetric, anaesthetic, imaging and blood transfusion staff.

Risk Management:

A clinical incident reporting form must be completed for all obstetric emergencies. Please refer to the Maternity Service Risk Management Strategy for details.

Related documents:

Document:
Enhanced Maternity Care
Women declining blood and blood products
Maternity Records Documentation Policy
Postpartum Haemorrhage – Guideline for Management
Patient case note documentation policy (trust wide)
Maternal death
Last offices policy (trust wide)
Severe pre-eclampsia and eclampsia : Guideline for Management
Thermal protection of the newborn
Swabs, instruments, needles and other accountable items (trust wide)
Resuscitation of the newborn
Blood transfusion policy (trust wide)
Resuscitation policy (trust wide)
Fetal heart rate monitoring in Labour

Guideline Development Methodology:

Extensive literature searches were undertaken of the Cochrane, CINAHL, MEDLINE, and Embase databases. Few papers were identified of appropriate trials on which to base recommendations on management of emergencies. A textbook search was performed, and the following texts chosen to support recommendations:

- Dewhursts Textbook of Obstetrics and Gynaecology for Postgraduates, 5th edition (1995) ed. C Whitfield, Oxford: Blackwell

- Obstetrics (1989) eds. Sir Alex Turnbull, Geoffrey Chamberlain. Edinburgh: Churchill Livingstone
- Obstetrics and the Newborn 3rd Edition (1997) eds. NA Beischer, EV Mackay, PB Colditz
- Fundamentals of Obstetrics and Gynaecology 6th Edition (1998) Derek Llewellyn-Jones. London: Mosby

2. Guidance

Definition:	The textbook definition is bleeding from the genital tract after 24 weeks gestation however all patients presenting with bleeding at or after **16 weeks** gestation should be managed according to the guideline.
Initial Assessment:	Assess the severity of bleeding, check maternal observations and auscultate the fetal heart rate. In cases of major APH, early involvement of the consultant obstetrician, anaesthetist and haematologist is essential. Blood loss is usually underestimated, particularly in concealed abruption, and complications can develop rapidly. CVP monitoring should be considered; this can help prevent under transfusion pre delivery and over transfusion post delivery.
Consider Cause:	Ask about abdominal pain and any precipitating factors. Examine the abdomen for uterine tenderness, fetal lie and presentation but defer vaginal examination at this stage. Placenta praevia and placental abruption account for around 50% of cases of bleeding in late pregnancy. Other causes include: – Marginal bleed – Local causes – Heavy show – Vasa praevia – Uterine rupture – Unexplained
Minor APH: **Blood loss < 50ml**	• FBC • Group and Save serum • Request Kleihauer if Rhesus negative, blood group unknown or suspected concealed abruption. (NB: Ultrasound scan is not sensitive enough for diagnosis of small abruption) • Administer anti D immunoglobulin when issued by Blood Bank. • ***Perform*** speculum examination to look for local causes ***if*** placenta praevia has been excluded on a previous ultrasound scan and bleeding has settled. Avoid digital VE unless speculum examination reveals an obviously dilated cervix.

	• **CTG** if the gestation is ≥ 26/40. Otherwise use sonicaid if less than 26 weeks. • **Ultrasound scan is not required** unless the placenta was low on the mid-trimester anomaly scan or there are concerns regarding fetal size and wellbeing. • **Offer admission** if placenta low lying, pain present or bleeding ongoing • **Continue aspirin** • **Consider next available induction of labour** for unexplained bleeding in the absence of low lying placenta if over 37+0weeks gestation. • **Recurrent minor APH:** If third episode of minor APH, patient should be discussed with Consultant on call. USS should be considered both at the time of the third bleed and growth scans in third trimester. Consider IOL at 39-40 weeks or sooner if further bleeding after 37 weeks.
Moderate APH: (Known as Major APH in RCOG guideline) **Blood loss 50-1000ml** **Maternal observations normal** **FHR normal**	• **NB: This is guidance from the RCOG but the management should be according to the full clinical picture and not only the estimated blood loss** • **IV Access – (ideally 16G cannula or above)** • FBC • Clotting screen (INR, APTTR and Fibrinogen) • Group and Save serum or Cross match 2 units blood if anaemic • Request Kleihauer if Rhesus negative, blood group unknown or suspected concealed abruption. Administer anti D immunoglobulin when issued by Blood Bank. • ***Consider*** speculum examination as for minor APH. **Avoid** digital VE unless speculum examination reveals an obviously dilated cervix • **CTG** (gestations as for minor APH). • **Ultrasound scan** to assess fetal wellbeing and confirm placental site should be considered when bleeding has stopped. • Consider **antenatal steroids** to promote fetal lung maturity if gestation is between 24+0 weeks and 34+6 weeks or if <39 weeks with anticipated caesarean delivery (eg previous caesarean section or low lying placenta). APH of unknown cause is associated with preterm delivery. • **Withhold aspirin and/or low molecular weight heparin** (eg Dalteparin) until bleeding settled and medical review has occurred. **Manage as for <u>Massive APH</u> if:** • **Abnormal maternal observations or haematology,** • **Marked abdominal pain or tenderness,** • **Fetal heart rate abnormalities.**

Massive APH:
 	
Blood loss > 1000ml or evidence of haemodynamic instability
	Summon:
	
	• **Core midwife,**
	• **Obstetric registrar, and**
	• **Anaesthetist**
	• **Inform Consultants:**
	  ○ Obstetrician
	  ○ Anaesthetist
	  ○ Haematologist
	
	• **IV Access (2 lines, at least one of which should ideally be 16G or greater)**
	• FBC
	• Clotting screen (INR, APTTR, Fibrinogen and DDimer)
	• Cross match at least 4 units blood. Activate Massive Obstetric Haemorrhage protocol if blood loss >1500ml or earlier if 1000ml and actively ongoing bleeding.
	• Request Kleihauer if Rhesus negative or blood group unknown. Administer anti D immunoglobulin (usually 500 International Units) when issued by Blood Bank.
	• Maternal pulse and BP every 15 minutes
	• Record maternal observations on high dependency chart
	• **Catheterise**, measure hourly urine output.
	• Measure blood loss, ideally weigh swabs / sheets / pads.
	• **CTG**
	• **Ultrasound scan** to assess fetal viability if unable to auscultate fetal heart rate.
	• **Give antenatal steroids** to promote fetal lung maturity if gestation is between 24+0 weeks and 34+6 weeks or <39 weeks with predicted caesarean delivery.
	• **Withhold aspirin and/or low molecular weight heparin** (eg Dalteparin) until bleeding stopped and medical review has occurred.
	• **Subsequent management must be discussed with the Consultant on call following assessment of maternal and fetal condition by the obstetric SpR.**
	• If bleeding is severe and continuing, maternal resuscitation should be followed by delivery.
	
	MATERNAL STATUS:
	
	Stable:
	• IV fluid replacement 1-1.5 litres Hartmann's solution or synthetic colloid depending on volume of blood loss.
	• Transfuse as appropriate: only if benefits outweigh risks of blood product administration.
	• Consider delivery according to fetal gestational age and condition.
	
	• **For blood loss >1500ml, see also guidance for Massive Obstetric Haemorrhage in Postpartum Haemorrhage – Guideline for Management.**

	• **Haemodynamically Compromised:**
	• **REFER TO MASSIVE OBSTETRIC HAEMORRHAGE SECTION IN POSTPARTUM HAEMORRHAGE- GUIDELINE FOR MANAGEMENT FOR APPROPRIATE MATERNAL MANAGEMENT**
	• Consider delivery if bleeding continues. **Ensure maternal resuscitation adequate and coagulation defects corrected.** Coagulopathy significantly increases the risks of Caesarean section [1].
	• **FETAL STATUS:**
	  • **Delivery** should be considered depending on gestation and fetal condition.
	  • **Vaginal delivery** must be discussed with the Consultant and may only be considered when maternal condition is stable, placenta praevia has been excluded and fetal wellbeing is not compromised.
	  • **Fetal Death:**
	  • Vaginal delivery is the management of choice in the absence of maternal collapse.

Case review:	These are based on a review of incident forms by the Risk Manager. Cases where there is fetal death will also be reviewed in conjunction with the clinical lead and referred to the Perinatal Risk Group if appropriate. Any action points / plans will then be referred to the Maternity Services Governance Group for monitoring.

3. Education and Training:

All Obstetricians and Midwives attend Mandatory multidisciplinary training day

4. Supporting References:

1. Barron SL (1995) Bleeding in pregnancy. In Chamberlain G (ed) Turnbull's Obstetrics, 2nd edition. Churchill Livingstone: 313-328.

2. Konje JC, Taylor DJ (1999) Bleeding in late pregnancy. In James DK, Steer PJ, Weiner CP, Gonik B (eds) High Risk Pregnancy, 2nd edition. WB Saunders: 111-128

3. McCormack, R.A. (2008) Antepartum bleeding of unknown origin in the second half of pregnancy and pregnancy outcomes. BJOG: An International Journal of Obstetrics & Gynaecology. 115(11):1451-7, 2008 Oct

4. Ohono, M. et al (2014) Does low-dose aspirin for preeclampsia prevention increase the risk of antepartum bleeding or placental abruption?American Journal of Obstetrics and GynecologyVolume 210, Issue 1, Supplement, S189

5. Magann, E.F. (2005) Antepartum bleeding of unknown origin in the second half of pregnancy: a review.Obstetrical and Gynecological Survey , Volume:60 , Issue:11

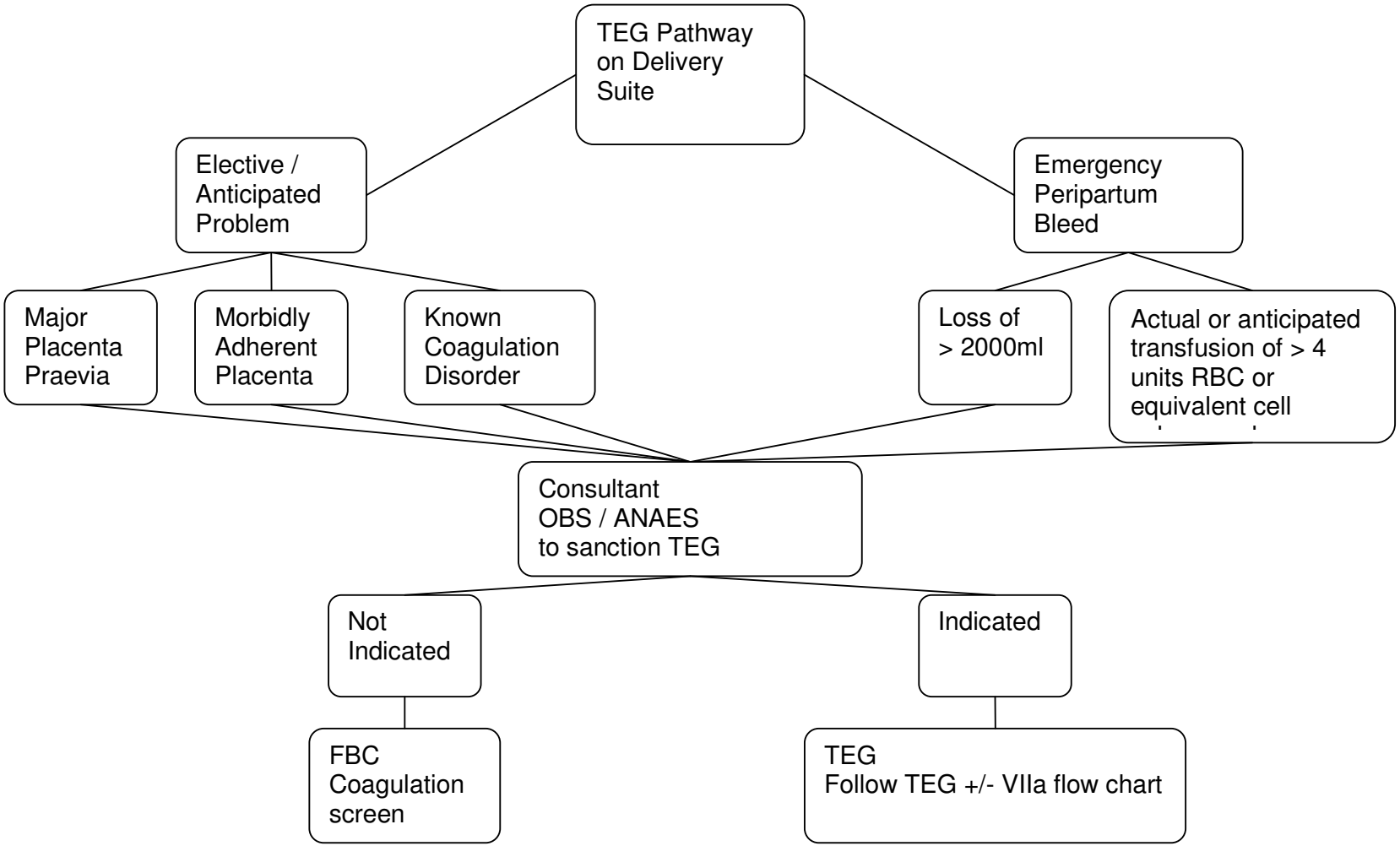
6. RCOG (2011) Antepartum Haemorrhage, Green top Guideline 63

DEVELOPMENT AND APPROVAL RECORD FOR THIS DOCUMENT		
Author / Lead Officer:	Original Working Group	**Job Title:** Consultant Obstetricians
Reviewed by:	N Ling and R Partridge	
Approved by:	Guidelines Group and Maternity Service Governance Group	**Date Approved:**

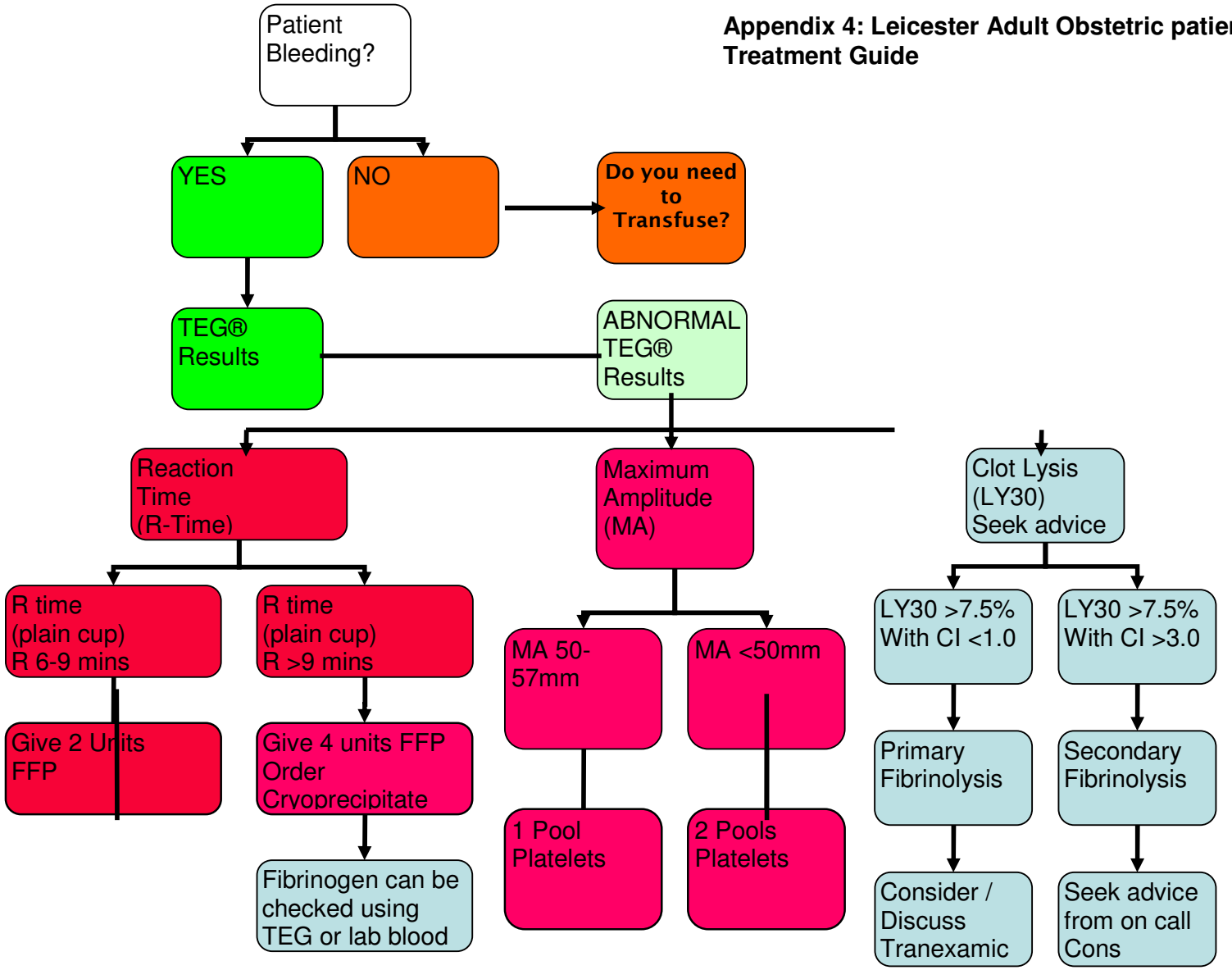
REVIEW RECORD			
Date	**Issue Number**	**Reviewed By**	**Description Of Changes (If Any)**
23.02.15	V2	N Ling	Guideline now applies to women >16 weeks Advice about when to stop aspirin / Dalteparin and when to restart When to consider admission after minor APH and when to offer IOL (>37wks) Slight adjustment to antenatal steroid administration based on RCOG advice
April 2018	V3	N Ling and R Partridge	A couple of phases made more obvious Steroids for caesarean sections at <39 weeks as per NICE guidance Definitions and names of each volume of haemorrhage changed to fit with RCOG guidance (now minor <50 instead of 100, moderate 50 – 1000 and massive >1000) but management should be based upon clinical picture Updated Trust major haemorrhage protocol inserted

DISTRIBUTION RECORD:			
Date	**Name**	**Dept**	**Received**
8.15	All Midwives and Obstetricians	Maternity	
April 2018	All Midwives and Obstetricians	Maternity	

Appendix 1


TEG Pathway on Delivery Suite
Elective / Anticipated Problem
Emergency Peripartum Bleed
Major Placenta Praevia
Morbidly Adherent Placenta
Known Coagulation Disorder
Loss of > 2000ml
Actual or anticipated transfusion of > 4 units RBC or equivalent cell
Consultant OBS / ANAES to sanction TEG
Not Indicated
Indicated
FBC Coagulation screen
TEG Follow TEG +/- VIIa flow chart

Appendix 4: Leicester Adult Obstetric patient -TEG® Treatment Guide



Massive haemorrhage – UHL protocol

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NB: includes massive obstetric Haemorrhage

In **CHILDREN**, involve senior anaesthetist from the start to advise on the appropriate drugs and doses

- ABCDE approach in appropriate environment
- Ensure suitably senior staff is involved **NOW**
- Give appropriate warmed IV crystalloid bolus
- Request / transfuse red cells if indicated, using O negative emergency blood if necessary (**NB**: Blood Bank must be informed if emergency blood is used to ensure resupply)
- Immediate haemorrhage control measures, e.g.
  - Direct pressure on wounds / nose if epistaxis
  - Pelvic binder for suspected unstable pelvic #
  - Tourniquet where indicated
- Beware hypothermia - use fluid warming devices and forced-air warming blanket (e.g. 'Bair Hugger')
- Consider antifibrinolytic measures (see box 1)
- Reverse any anticoagulation – see 'PCC clinician pack' and 'Bleeding on DOACs' guidance on INsite
- Arrange cell salvage where available (see box 2)

E.g. trauma team leader or equivalent – including 'flying squad' doctor

Senior decision maker decides to declare massive haemorrhage (see box 3)?

N → Protocol not applicable; revisit later if indicated

Y

- Inform your consultant **NOW**
- Nominate a Blood Bank 'coordinator' for the duration of the incident (inform laboratory if this changes)
- Coordinator dials **2222** and says 'I am activating the massive haemorrhage protocol'
- When Blood Bank staff call back, coordinator will say '**Massive haemorrhage DECLARED**' and give details of
  - Coordinator's own name
  - Incident location (e.g. ED resuscitation room)
  - Extension number (ideally including one alternative)
  - Patient's details (if already known)
- Ensure required blood samples have been sent (see box 4)
- Blood bank will advise where to send porter

Blood Bank

Site	Extn	Bleep
LRI	6605	4703
GGH	3577	2588
LGH	4564	3383

Blood Bank immediately to prepare (next) **MHP** (massive haemorrhage pack – see reverse / next page)

Bleeding controlled?

Y → (see box 5)

N → Give **MHP** (whole or partially as per senior clinical judgment)

Involve duty haematology doctor

- Follow through bleeding control measures (see box 5)
- Repeat laboratory test bundle (see box 4)
- Beware hyperkalaemia if >6units of red cells transfused
- Make goal-directed adjustments (see box 6)

Blood Bank to call coordinator 15min after each **MHP** released

Bleeding controlled?

N → (see box 5)

Y

- **Red cells, FFP & cryoprecipitate** Keep in cool box; return within 2h
- **Platelets** Return within 4h

- Coordinator calls Blood Bank, stating '**Massive haemorrhage protocol STAND DOWN**'
- Return unused products within required timeframe
- Complete goal-directed adjustments (see box 6)

Hafiz Qureshi and Martin Wiese . Oct17 . Version 37

① Antifibrinolytic measures

Consider tranexamic acid IV; in adults, give

- 1G (i.e. 10mL) neat as slow bolus over 10min, **followed by**
- 1G (10mL) in 0.9% saline 90mL over 8h (i.e. set infusion pump to deliver 12.5mL/h)

In children, give a 15mg/kg bolus (max 1G), then 2mg/kg/h for 8h in a convenient volume of 0.9% saline

NB: In obstetrics, give only if still bleeding after obstetric pharmacological first line techniques

In trauma, use with caution if >3h from injury

② Cell salvage

Cell salvage machines are available from

LRI
- Equipment room near Theatre 6 (Balmoral Building)
- Obstetric theatre (Kensington building)

GGH
Cardiac theatres and orthopaedic theatres

LGH
Main theatres and obstetric theatres

NB: For every 1L of salvaged red cells ensure balanced replacement of other blood components as followed:

• FFP	3 units
• Platelets	1 ATD *
• Cryoprecipitate	2 pools (after 2L)

* Adult Therapeutic Dose

③ When to declare

Typical scenarios include (but are not limited to)

- Clinically obvious severe traumatic bleeding or collapse
- Haemorrhagic shock (e.g. systolic BP <70 initially or <90 after fluid bolus)
- ≥4 units (in children: ≥20mL/kg) red cells transfused within an hour **AND** similar further needs anticipated
- Bleeding rate 150mL/min
- 50% total blood volume loss in 3h

④ Laboratory test bundle

- Near-patient tests
  - Venous blood gas – machines available in

LRI	ED	AMU	ITU
GGH		CDU	CICU
LGH			ITU

  depending on local availability also
  - FBC or Hb (HemoCue)
  - Thromboelastography (TEG)
- Laboratory tests
  - FBC, U&Es, ionized Calcium, INR, APTT and fibrinogen
  - LFT and G&S **only initially**

⑤ Bleeding control measures

- **For obstetric haemorrhage** See INsite documents UHLSP-600-6660 and UHLSP-600-7067
- **For gynaecological haemorrhage** See INsite document 3691078451
- **For acute upper GI bleeding** See INsite document 8244591488
- Consider interventional radiologist advice (e.g. for arterial embolization in pelvic fractures)
- Consider 'damage control surgery'
- Haematology duty doctor can advise if the following products are indicated
  - Recombinant activated Factor VII (rFVIIa) – see INsite document UHLSP-600-6023
  - Prothrombin Complex Concentrate (PCC)

⑥ Goal-directed adjustments

***NB**: In children, involve anaesthetist ASAP to advise on appropriate dosing*

- **If fibrinogen <1 (<1.5 in obstetrics)** Give Cryoprecipitate 2 adult pools
- **If ionized Calcium <1** Give Calcium Chloride 10% 10mL IV over 3min
- **If platelets <80** Give 1 adult therapeutic dose (ATD) of platelets; give 2 ATD if platelets <30
- **If TEG trace abnormal** Give appropriate products as guided by TEG treatment algorithm
- **If INR or APTT >1.5 (NB: use these only in those areas where no TEG available)** Give FFP 4 units