Mid Essex Hospital Services NHS
NHS Trust

GUIDELINE FOR THE MANAGEMENT OF POSTPARTUM HAEMORRHAGE	CLINICAL GUIDELINES Register No: 04234 Status: Public

Developed in response to:	Intrapartum NICE Guidelines RCOG guideline
Contributes to CQC Outcome No:	4

Consulted With	Post/Committee/Group	Date
Dr Agrawal	Clinical Director for Women's, Children's and Sexual Health Directorate	February 2012
Miss Joshi	Consultant for Obstetrics and Gynaecology	
Graham Philpott	Anaesthetic Consultant	
Meredith Deane	Head of Midwifery/Nursing for Women's and Children's Services	
Deb Cobie	Maternity Risk Management	
Judy Evans	Practice Development Midwife	
Claire Fitzgerald	Pharmacy	
Carol Hunt	Midwife	
Sarah Moon	Specialist Midwife for Guidelines and Audit	
Professionally Approved By		
Miss Rao	Lead Consultant for Obstetrics and Gynaecology	February 2012

Version Number	3.2
Issuing Directorate	Obstetrics and Gynaecology
Ratified By	Documents Ratification Group
Ratified On	26th April 2012
Trust Executive Sign Off Date	May 2012
Next Review Date	April 2015
Author/Contact for Information	Paula Hollis, Senior Midwife
Policy to be followed by	**Midwives, Obstetricians, Paediatricians**
Distribution Method	Intranet & Website. Notified on Staff Focus
Related Trust Policies (to be read in conjunction with)	04071 Standard Infection Prevention 07072 Guideline for the Management of a patient reporting an Antepartum Haemorrhage 07040 Guideline for the Management of Pregnant and Postnatal Patients Refusing Blood Products Trust Blood Transfusion Policy 06029 Guideline for the transfer of mother and babies to different care settings 07024 Emergency transport of blood and specimens in the event of major obstetric haemorrhage 09007 Guideline for the management of bladder care in pregnancy 04232 Guideline to assist medical and midwifery staff in the provision of high dependency care and arrangements for safe and timely transfer to ITU 09095 Guideline for the severely ill pregnant patient

Review No	Reviewed by	Review Date
1.0	Julie Bishop	January 2005
2.0	Dr Zamzam	May 2008
2.1	Equality and diversity; audit and monitoring; Code Red appendix	November 2009
2.2	Numbering sequence	January 2010
3.0	Paula Hollis	April 2012
3.1	Sarah Moon – Clarification to points 7.6 and 9.0	November 2012
3.2	Sarah Moon – point 7.12 - Intraoperative cell savage facility	December 2012

INDEX

1. **Purpose of Guideline**
2. **Equality and Diversity**
3. **Background**
4. **Definition**
5. **Aetiology**
6. **Risk Factors**
7. **Management of a Postpartum Haemorrhage**
8. **Considerations**
9. **Staffing and training**
10. **Infection Prevention**
11. **Audit and Monitoring**
12. **Guideline Management**
13. **Communication**
14. **References**
15. **Appendices**

    A. Appendix A - Flow Chart for Massive Obstetric Haemorrhage
    B. Appendix B – Code Red

1.0 Purpose of Guideline

1.1 The aim of this guideline is to provide guidance on prediction, early detection, management of postpartum haemorrhage (PPH) and provide the optimum outcome for the mother.

2.0 Equality and Diversity

2.1 The Trust is committed to the provision of a service that is fair, accessible and meets the needs of all individuals.

3.0 Background

3.1 In triennium 2003-2005, 14 women died from PPH; a rate of 0.66 per 100 000 maternities, similar to the rate for the previous triennium. Almost three fifths of those who died received less than optimal care.

3.2 The incidence varies from 4-22% in the UK.

4.0 Definition

4.1 **Primary minor PPH** involves the loss of 500 ml to 1000 ml of blood from the genital tract within 24 hours of birth of the baby.

4.2 **Primary severe PPH** involves the loss of 1000 ml or more of blood from the genital tract within 24 hours of the birth of the baby.

4.3 **Secondary PPH** is defined as excessive blood loss from the genital tract after 24 hours following delivery, until six weeks post delivery.

4.4 Post caesarean section (LSCS) a PPH involves the loss of 1000 ml or more.

4.5 A **severe PPH** following LSCS involves the loss of 1500 ml or more.

4.6 A haemorrhage can be considered a **major haemorrhage** in cases where four units of blood have been transfused and further units are required.
(Appendix A)

5.0 Aetiology

- Uterine atony
- Retained placental tissue
- Trauma
- Coagulopathy

6.0 Risk factors

6.1 Patients with risk factors for postpartum haemorrhage should be advised to give birth in an obstetric unit where further emergency treatment options are available.

6.2 Antenatal risk factors:

- Previous retained placenta or PPH
- Maternal haemoglobin level below 8.5 g/dl at onset of labour
- Body mass index greater than 35 kg/m2
- Grand multiparity (parity 4 or more)
- Antenatal haemorrhage
- Over distention of the uterus (i.e. multiple pregnancy, polyhydramnios or macrosomia)
- Existing uterine abnormalities
- Low lying placenta
- Maternal age (35 years or more)

6.3 Risk factors in labour:

- Induction of labour
- Prolonged first, second or third stage of labour
- Secondary arrest of labour, especially in multi-gravid patients
- Use of oxytocin®
- Precipitate labour
- Operative birth or caesarean section

7.0 Management of PPH

7.1 Once a PPH has been identified management may involve four components, all of which must be undertaken **simultaneously**

- Communication
- Resuscitation
- Monitoring and investigation
- Arresting the bleeding

7.2 **Communication:**

7.3 **Minor PPH** (no clinical shock)

- In the consultant unit the midwife responsible for the care of the patient should inform the senior midwife/labour ward co-ordinator

- The senior midwife/labour ward co-ordinator should inform the obstetric registrar/consultant and anaesthetist on call

- In the community setting or midwife-led unit the midwife responsible for the care of the patient should inform the labour ward co-ordinator and arrange transfer by ambulance to the consultant unit
  (Refer to the 'Guideline for the transfer of mother and babies to different care settings'. Register number 06029)

7.4 **Severe PPH**

- Call for assistance from the senior midwife/labour ward co-ordinator

- Request a **'code red'** to be instigated

(Refer to Appendix B)

- The obstetric registrar should inform the obstetric consultant on call

- The anaesthetic registrar should inform the anaesthetic consultant on call if he/she has any cause for concern

- If the patient is in a stable condition but require a blood transfusion the obstetric/anaesthetic registrars should update the senior midwife/labour ward co-ordinator and inform the haematologist/blood transfusion as appropriate

- **'Code yellow'** should be activated by the senior midwife/labour ward co-ordinator at request of obstetric/anaesthetic registrar; in the event of 'O negative' blood being required/used; this code will alert the haematologist and inform a porter that he needs to come directly to the LW to collect the blood samples. He/she will then wait until the blood units are ready and bring them directly back to LW for use.
  (Refer to the guideline entitled 'Emergency transport of blood and specimens in the event of major obstetric haemorrhage'; register number 07024)

- The obstetric registrar should inform the obstetric consultant on call unless he/she requests that the senior midwife/labour ward co-ordinator should liaise on their behalf

- It is the responsibility of the both the obstetric consultant and anaesthetic consultant to liaise with each other regarding the patient's condition and updating the individual management plan. The obstetric/anaesthetic consultants should update the senior midwife/labour ward co-ordinator

- Ensure all care, conversations and decisions have been clearly documented in the patient's health care records

- Once again, in the community setting or midwife-led unit the midwife responsible for the care of the patient should inform the labour ward co-ordinator and arrange transfer by ambulance (paramedic) to the consultant unit
  (Refer to the 'Guideline for the transfer of mother and babies to different care settings'. Register number 06029)

7.5 **Resuscitation:**

7.6 Minor PPH

- IV access (16G cannula x1)
- Obtain blood for full blood count (FBC), group and save
- Commence crystalloid (hartmann's) infusion
- Observations (refer to point 7.13)

7.7 Severe PPH

- IV access (16G cannula x2)
- Obtain blood for full blood count, clotting screen and cross match
- Commence crystalloid (hartmann's) infusion
- Lay patient flat
- Administer oxygen via reservoir mask at 15 litres/minute
- Transfuse blood (refer to point 7.4)

7.8 Until blood available, infuse in turn as rapidly as required

- crystalloid maximum 2 litres (i.e. hartmann's)
- colloid maximum 1.5 litres (i.e. gelofusine, haemacel)

7.9 If cross-matched blood is still unavailable once 3.5 litres of crystalloid/ colloid infused, give O negative blood or uncross-matched (own group blood). Two units of 'O' negative blood are available in the maternity unit and a further 2 units are available in the blood fridge in the general corridor. The porter should be bleeped to collect these 2 units of blood urgently from the general side.

7.10 If bleeding unrelenting and results of coagulation studies are still unavailable, the anaesthetic registrar/consultant should administer one litre of fresh frozen plasma (FFP) and 10 units of cryoprecipitate empirically.

7.11 Use the rapid warmed infusion equipment if available. Do not use special blood filters as they slow infusion.

7.12 Intraoperative cell salvage is a routine procedure within MEHT. It is the responsibility of the obstetric and anaesthetic teams to arrange on an individual basis. The operation department practitioners (ODP) are trained to collect and set up the intraoperative cell salvage equipment.

7.13 **Monitoring and Investigation:**

Minor PPH (blood loss 500-1000 ml, no clinical shock)

- Venepuncture (20ml) for FBC, clotting screen and X-match
- ¼ hourly – ½ hourly pulse, respirations and BP recordings
- Observing any further blood loss via the genital tract
- Maintaining a fluid balance and document in the maternity early obstetric warning score (MEOWS) chart
  (Refer to the guideline for the management of bladder care in pregnancy'. Register number 09007)

7.14 **Major PPH** (blood loss more than 1000ml or clinical shock)

- Obtain 20ml of blood for FBC, clotting screen and X-match. Fill clotting sample (blue bottle) first and ensure the bottle is completed filled. Inability to do this may affect results.
- Instigate **category 1** for immediate transportation of blood specimens for analysis
- ¼ hourly pulse, respirations and BP recordings (using oximeter, ECG (electro-cardiograph) and automated BP (blood pressure)
  (Refer to the 'Guideline for the severely ill pregnant patient' Register number 09095)
- Maintain a 'high dependency' observation chart, including MEOWS assessment.
- Foley's catheter to monitor the urine output hourly and maintain a fluid balance chart and document in the MEOWS chart
  (Refer to the guideline for the management of bladder care in pregnancy'. Register number 09007; and the guideline for the 'Management of the severely ill pregnant patient'; register number 09095)
- Observing any further blood loss via the genital tract
- CVP (central venous pressure) monitoring (once appropriately experienced staff available)

- These patients should be cared for on labour ward where they receive one to one care by an appropriately trained member of staff. Depending on the stability of the patient consider transfer to ITU
  (Refer to the 'Guideline to assist medical and midwifery staff in the provision of high dependency care and arrangements for safe and timely transfer to ITU'. Register number 04232)

7.15 **Arresting the bleeding:**

7.16 The commonest cause of PPH is uterine atony. However, clinical examination must be undertaken to exclude other causes:

- Retained products (placenta, membranes, clots)
- Vaginal/cervical laceration
- Ruptured uterus
- Broad ligament haematoma
- Extra-genital bleeding

7.17 When uterine atony is perceived the cause of the bleeding, the following measures should be instituted, in turn, until the bleeding stops.

- Uterine compression (rubbing up the fundus to stimulate contractions)
- Ensure the bladder is empty (Foley's catheter, leave in-situ)
- Ergometrine 0.5 mg slow IV injection OR second dose of IM syntometrine (if IV access not available)
- Syntocinon infusion (40 units in 500ml Hartmann's at 125ml/hr)
- Carboprost (Haemabate) 0.25mg IM (repeated at intervals not less than 15 minutes to maximum of 5 doses). It should be noted that **carboprost** is **kept** in the **fridge** (in terms of its location in an emergency situation). The obstetric registrar needs to consider transfer to obstetric theatre if more than 2 doses are required
- Misoprostil 800 micrograms PR (per rectum). It should be noted that **misoprostil** is **kept** in the **CD** (controlled drugs) **cupboard** (in terms of its location in an emergency situation).

7.18 If conservative measures fail to control haemorrhage, initiate surgical haemostasis sooner rather than later. The following interventions should be undertaken, in turn, until bleeding stops:

- At laparotomy, direct intra-myometrial injection of Carboprost 0.5mg
- Uterine artery embolisation
- Bilateral ligation of uterine arteries
- Bilateral ligation of internal iliac arteries
- Haemostatic uterine suturing (e.g. B-Lynch)
- Hysterectomy

7.19 Interventional radiology is currently not available at MEHT.

8.0 Considerations

8.1 There are occasions when patients will refuse blood products i.e. religious beliefs. (Refer to the 'Guideline for the management of pregnant and postnatal patients who refuse blood products'. Register number 07040)

9.0 Staffing and Training

9.1 All midwifery and obstetric staff must attend yearly mandatory training which includes skills and drills training, including the management of PPH, maternal resuscitation and early recognition of the ill patient.
(Refer to 'Mandatory training policy for Maternity Services (incorporating training needs analysis. Register number 09062)

9.2 All midwifery and obstetric staff are to ensure that their knowledge and skills are up-to date in order to complete their portfolio for appraisal.

10.0 Infection Prevention

10.1 All staff should follow Trust guidelines on infection prevention by ensuring that they effectively 'decontaminate their hands' before and after each procedure.

10.2 All staff should ensure that they follow Trust guidelines on infection prevention. All invasive devices must be inserted and cared for using High Impact Intervention guidelines to reduce the risk of infection and deliver safe care. This care should be recorded in the Saving Lives High Impact Intervention Monitoring Tool Paperwork (Medical Devices).

11.0 Audit and Monitoring

11.1 Audit of compliance with this guideline will be considered on an annual audit basis in accordance with the Clinical Audit Strategy and Policy, the Maternity annual audit work plan and the NHSLA/CNST requirements. The Audit Lead in liaison with the Risk Management Group will identify a lead for the audit.

11.2 As a minimum the following specific requirements will be monitored:

- Agreed local definition of postpartum haemorrhage
- Documented clear lines of communication between the consultant obstetrician, consultant anaesthetist, haematologist, blood transfusion personnel and labour ward coordinator
- Description of the management of women with a postpartum haemorrhage
- Requirement to document fluid balance
- Urgent access to blood, including portering arrangements
- Clear and well understood trigger phrase to activate the massive haemorrhage protocol
- Requirement to document an individual management plan in the health records of women who decline blood products
- Current arrangements for the use of intraoperative cell salvage
- Current arrangements for the use of interventional radiology
- Maternity service's expectations for staff training, as identified in the training needs analysis
- Process for continuous audit, multidisciplinary review of audit results and subsequent monitoring of action plans

11.3 A review of a suitable sample of health records of patients to include the minimum requirements as highlighted in point 11.2 will be audited. A minimum compliance 75% is

required for each requirement. Where concerns are identified more frequent audit will be undertaken.

11.4 The findings of the audit will be reported to and approved by the Maternity Risk Management Group (MRMG) and an action plan with named leads and timescales will be developed to address any identified deficiencies. Performance against the action plan will be monitored by this group at subsequent meetings.

11.5 The audit report will be reported to the monthly Maternity Directorate Governance Meeting (MDGM) and significant concerns relating to compliance will be entered on the local Risk Assurance Framework.

11.6 Key findings and learning points from the audit will be submitted to the Patient Safety Group within the integrated learning report.

11.7 Key findings and learning points will be disseminated to relevant staff.

12.0 Guideline Management

12.1 As an integral part of the knowledge, skills framework, staff are appraised annually to ensure competency in computer skills and the ability to access the current approved guidelines via the Trust's intranet site.

12.2 Quarterly memos are sent to line managers to disseminate to their staff the most currently approved guidelines available via the intranet and clinical guideline folders, located in each designated clinical area.

12.3 Guideline monitors have been nominated to each clinical area to ensure a system whereby obsolete guidelines are archived and newly approved guidelines are now downloaded from the intranet and filed appropriately in the guideline folders. 'Spot checks' are performed on all clinical guidelines quarterly.

12.4 Quarterly Clinical Practices group meetings are held to discuss 'guidelines'. During this meeting the practice development midwife can highlight any areas for further training; possibly involving 'workshops' or to be included in future 'skills and drills' mandatory training sessions.

13.0 Communication

13.1 A quarterly 'maternity newsletter' is issued and available to all staff including an update on the latest 'guidelines' information such as a list of newly approved guidelines for staff to acknowledge and familiarise themselves with and practice accordingly.

13.2 Approved guidelines are published monthly in the Trust's Focus Magazine that is sent via email to all staff.

13.3 Approved guidelines will be disseminated to appropriate staff quarterly via email.

13.4 Regular memos are posted on the guideline notice boards in each clinical area to notify staff of the latest revised guidelines and how to access guidelines via the intranet or clinical guideline folders.

14.0 References

Confidential Enquiry into Maternal Deaths in the UK (2011)
Saving Mothers Lives – Reviewing Maternal Deaths To Make Motherhood Safer 2006-2008. London. Wiley Blackwell.
Available http://onlinelibrary.wiley.com

Royal College of Obstetricians and Gynaecologists (2009)
Prevention of Management of Post Partum Haemorrhage. London RCOG.
Available at www.rcog.org.uk

Davies K and Rucklidge M 2007
Management of Obstetric Haemorrhage
Available at www.anaesthethesiauk.com

Kings Fund (2008) Safe Birth: Everybody's Business – Independent Inquiry Into The Safety of maternity Services in England. London's Kings Fund.
Available at www.kingsfund.org.uk

National Institute for Health and Clinical Excellence (NICE) 2007
Intrapartum Care: Care of Healthy Women and Their Babies During Childbirth. London. NICE
Available at www.nice.org.uk

Appendix A

Mid Essex Hospital Services NHS
NHS Trust

PPH ≥1500mls Proforma

First Name:	
Surname:	
Hospital Number:	
NHS Number:	
Date/Time of Event:	
Location:	

Staff Present	Name	Called	Arrived
Midwife			
Labour Ward Co-ordinator			
Obstetric SHO			
Obstetric Registrar			
Obstetric Consultant			
Anaesthetist			
Anaesthetic Consultant			
ODP			
Obstetric Theatre Staff			
Others			
Scribe			

Provisional Diagnosis:				
Resuscitation Required:	Yes	No	Details:	
Code Red:	Yes	No	Time Initiated:	
Code Yellow:	Yes	No	Time Initiated:	
Placenta:	Complete		Incomplete	Retained

	Yes	No	Time:	By Whom
Uterine Compression:				
IV Access:				
Indwelling Urinary Catheter:				
Hourly Urine:				

Initial Observations:						
BP:	P:	T:	Resps:	O_2 SATS:		Est Blood Loss:
Capillary Refill:		MEOW Score:		ECG:		
Pulse Oximeter:						
MEOWS chart commenced		Yes		Fluid balance commenced		Yes

Baby Delivered:	Time			
Method of Delivery:	SVD	Forceps	Ventouse	Kiwi
	ELSCS	EMLSCS	Live Birth	Stillbirth

Drugs: (Not listed in order of administration)		
	Time Given:	**By Whom:**
Syntometrine (1 amp) 1st dose		
Syntometrine (1 amp) 2nd dose Or Ergometrine (0.5mgs)		
IV Syntocinon (5iu)		
IVI Syntocinon (40 units)		
Carboprost/Haemabate 0.25mg (at 15 min intervals/max 8 doses)	**1.**	
	2.	
	Consider transfer to theatre	
	3.	
	4.	

	5.	
	6.	
	7.	
	8.	
Misoprostil 800mg PR		

PTO

PPH ≥1500mls Proforma cont…

Bloods/Tests:		
	Time Taken:	**By Whom:**
FBC		
G+S		
Haemacue		
Cross Match		
U & E's		
LTF's		
Clotting		

Fluids:				
	Time Given:		**By Whom:**	
Hartman's (Crystalloid) (Max 2 litres)				
Volplex (Colloid) (Max 2 litres)				
Normal Saline				
O Negative Blood				
Cross Matched Blood				
FFP (1 Litre)				
Cryoprecipitate 10 Units				
Platelet Concentrate				
Haematologist Informed:	Yes	No	Time:	By Whom:
Declined blood products	Yes		No	

Transfer to Theatre	**Time:**	**By Whom:**
Arrival in OT		
Procedure Performed		
Partner Informed		
Maternal Collapse		
ITU Informed		
SOM Informed		
Debrief Counselling:		
Date/Time to ITU		

CAUSE OF BLEED	**Tone**	**Trauma**	**Tissue**	**Thrombin**	**Other (state)**
TOTAL BLOOD LOSS					

Additional Notes:

If Blood Loss >2000mls		
Notes Photocopied:	Yes	
Risk Management Informed	Yes/No	By Whom:
Concise (Level) 1 report completed & emailed to risk midwife	Yes/No	By Whom:
HOM informed	Yes/No	By Whom
Clinical Director & Lead Informed:	Yes/No	By Whom

Mid Essex Hospital Services NHS Trust
Women's, Children's and Sexual Health Directorate

CODE RED

There are two types of emergencies (code RED) that require urgent 'crash call' responses using the new 4444 emergency call number.

Initiating an emergency

- Co-ordinator/senior staff member to initiate code
- Dial 4444
- Specify code **RED**
  (Refer to below criteria)
- Give location to switchboard (i.e. maternity obstetric theatre/delivery room)

Code RED for obstetric emergencies

- Crash section
- Major haemorrhage
- Maternal fitting

Code RED switchboard will fast bleep the following:

- On call obstetric registrar
- On call obstetric SHO
- On call anaesthetist
- On call anaesthetic assistant
- On call paediatric registrar
- On call paediatric SHO
- Theatre scrub team

****** In the event of a cardiac arrest you will still need to dial 2222******