# Guideline Document Control Sheet

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|---|---|---|---|---|---|---|
| Reference Number | *GUID/MAT/1012* | | | | | |
| Title | Postpartum Haemorrhage – Massive Obstetric Haemorrhage | | | | | |
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## Final approval

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| Chairman or Executive Sponsor's Signature |  |
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| Approving Committee | Clinical Standards and Therapeutics Committee |
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# Version control table

| Date of issue | Version number | Status |
|---|---|---|
| November 2004 | 1.0 | Superseded |
| November 2009 | 2.0 | Superseded |
| April 2010 | 2.1 | Superseded |
| 19/01/12 | 2.2 | Superseded |
| 09/04/13 | 3.0 | Superseded - extended |
| 12/06/2017 | 4.0 | Approved |

# Table of revisions

| Date | Section | Revision | Author |
|---|---|---|---|
| October 2009 | Full | Review to ensure guideline reflects: Current evidence based practice | Joanne Woodward/Philippa Marsden |
| April 2010 | Partial | Clarification on removal of Tamponade balloon Page 8,9,12, 1 | Philippa Marsden |
| December 2011 | Partial | Reviewed and amended in line with CDDFT policy for the development and management of policy and guidance documents<br><br>Change to communication – 'trigger of massive blood loss protoco'l – Amended to include trigger for massive blood loss protocol recommendation in line with recent NPSA Rapid Response Report 21/10/2010 (page 6) | Philippa Marsden |
| Jan 2012 | partial | Reviewed to make lines of communication clear | J Woodward |
| Jan 2013 | Full | Reviewed and original guideline split to make separate Antepartum and Postpartum Haemorrhage guideline.<br><br>Flow chart added | Elizabeth Zachariah<br><br>J Woodward |
| Dec 2106 | Full | Reviewed as out of date.<br><br>Reviewed in line with RCOG guidance 2016<br><br>Included flow chart<br><br>Tranexamic acid added as a line of management | K Hooper<br><br>T Saukila<br><br>EBPG |

# Contents

# 1. Introduction

Obstetric haemorrhage remains one of the major causes of maternal death in the UK. The 2011-13 Confidential Enquiries into Maternal Deaths and Morbidity report identified 13 direct deaths due to obstetric haemorrhage in the UK and Ireland; the report place obstetric haemorrhage as the second leading cause of direct maternal deaths

A systematic review suggests that there may be regional variation in the prevalence of PPH; standardisation of the measurement of PPH is recommended so that data from various regions is comparable.

Primary postpartum haemorrhage (PPH) is the most common form of major obstetric haemorrhage

# 2. Purpose

The purpose of this guideline is to support staff in providing care based on best practice and best available evidence in reducing the incidence of massive haemorrhage by:

- Identification of high risk groups and instituting measures to prevent/minimise post partum haemorrhage.
- Clear and timely communication between surgical, anaesthetic and haematology/blood transfusion services.
- Prompt resuscitation and supportive measures including replacing the blood loss.
- Investigating the cause for and arresting the haemorrhage.
- Instituting appropriate monitoring.

# 3. Duties

This guideline defines the roles and responsibilities of midwives, obstetricians, anaesthetists, haematologist and ancillary staff involved in the care of women with post partum haemorrhage delivering in an obstetric unit (UHND, DMH).

# 4. Training

The maternity service has set out its expectations for training in the Maternity Services Training Needs Analysis. This has been incorporated into the Trustwide TNA.

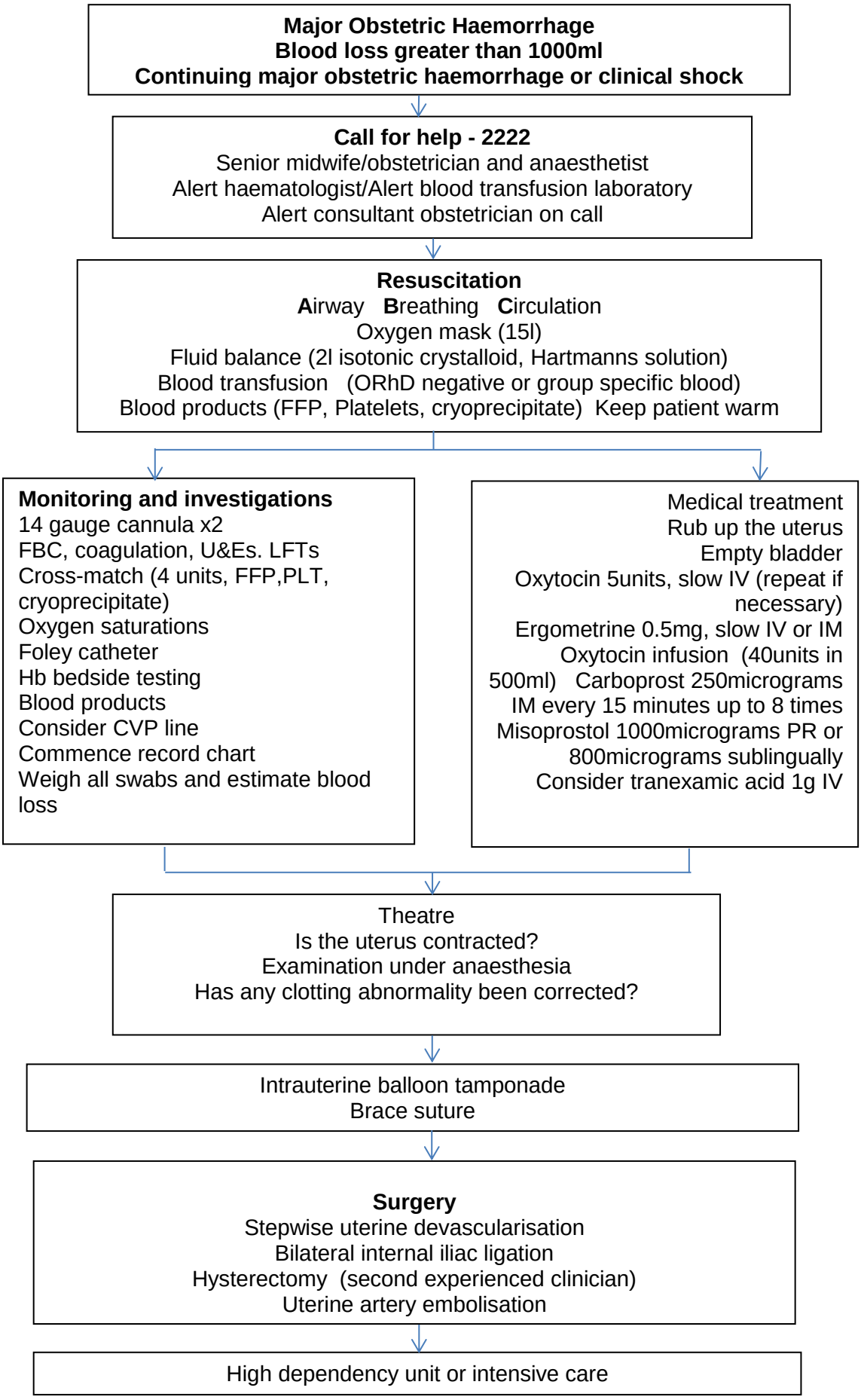
# 5. Management

## 5.1 Definitions

**Primary Postpartum Haemorrhage** – loss of over 500ml blood within 24 hours of delivery.
**Major Postpartum Haemorrhage** – Blood loss of over 1000ml (RCOG) and can be divided further into moderate (1000-2000ml) or severe (more than 2000ml)

A smaller blood loss associated with clinical signs of shock, hypotension (systolic BP drop of 30mmHg), tachycardia (pulse rate rise of more than 30bpm), tachypnoea (resps more than 30) or oliguria can also be managed following this protocol

**Secondary Postpartum Haemorrhage** – Abnormal or excessive bleeding from the birth canal between 24 hours and 12 weeks postpartum.



## 5.2 Causes of Postpartum Haemorrhage

- **Tone** – most common cause
- **Tissue** – Retained placenta, placenta accreta.
- **Trauma** – Genital trauma i.e. vulva, vaginal, cervix, uterus or broad ligament.
- **Thrombin** – Disseminated intravascular coagulation (DIC), pre-existing bleeding disorders such a haemophilia or women taking therapeutic anticoagulants.

Blood loss can be easy to underestimate and difficult to accurately estimate.cumulative blood loss should be recorded contemporaneously. Swabs and clots should be weighed to gain a more accurate estimate.

**COMMUNITY**

If the situation arises in the **community setting** call 999 and instigate intrapartum/ postpartum transfer of women from community into hospital guideline. – follow PPH protocol until transfer takes place **see Maternal Transfer GUID/MAT/1016.**

## 5.3 Prediction and Prevention of PPH

Identify risk factors in antenatal and intrapartum period and modify care plans accordingly including place of delivery.

Women with known risk factors should deliver at DMH or UHND.

| The Four Ts | Risk factors/notes | Sign and date |
|---|---|---|
| **Tone: abnormalities of uterine contraction** | | |
| Overdistension of uterus | Polyhydramnios, multiple gestation, macrosomia | |
| Intra-amniotic infection | Fever, prolonged rupture of membranes | |
| Functional/ anatomical distortion of uterus | Rapid labour, prolonged labour, fibroids, placenta praevia, uterine anomalies | |
| Uterine relaxants eg magnesium/ nifedipine | Terbutaline, halogenated anaesthesia, GTN | |
| Bladder distension | May prevent uterine contractions | |
| **Tissue: retained products of conception,** | | |
| Retained cotyledon or succenturiate lobe | | |
| Retained blood clots | | |
| **Trauma: genital tract injury** | | |
| Lacerations of the cervix, vagina or perineum | Precipitate labour, instrumental delivery | |
| Extensions, lacerations at | Malposition deep engagement | |

| | | |
|---|---|---|
| caesarean | | |
| Uterine rupture | Previous uterine surgery | |
| Uterine inversion | High parity, excessive cord traction | |
| **Thrombin: abnormalities of coagulation** | | |
| ***Pre-existing states*** eg Von Willebrand Haemophilia | History of hereditary coagulopathies or liver disease | |
| ***Acquired in pregnancy***:<br>Gestational thrombocytopenia<br>PET with HELLP | Bruising<br>Elevated blood pressure | |
| ***DIC***: IUD, severe infection, abruption, amniotic fluid embolus,<br>Severe PIH/PET | Coagulopathy | |
| ***Therapeutic anticoagulation*** | DVT/PE treatment | |

**Minimising risk – treat antenatal anaemia *see GUID/MAT/1214 Anaemia in Pregnancy***

**Minimising risk – blood loss at delivery.**
**Active management of third stage:**

**Uterotonics**
Vaginal delivery with the birth of the anterior shoulder: **oxytocin 10 units IM**
Caesarean section: **oxytocin 5units slow IV injection**

In absence of hypertension if increased risk of bleeding give ergometrine-oxytocin ***(syntometrine 1ml***) instead.

**Combination of preventative measures** superior to oxytocin alone

Commence oxytocin infusion in vaginal and caesarean deliveries in women at increased risk.

**Oxytocin 40 units in 500ml sodium chloride 0.9% at 125ml/hr**

At caesarean consider **tranexamic acid 1.0g or 0.5g IV** if blood loss greater than 500ml.

Carboprost and misoprostol not preferable to oxytocin in preventing PPH.

Delayed cord clamping: unless concerns over cord integrity or fetal wellbeing.

Carbetocin: no statistical difference with oxytocin. Only use at caesarean prevention of PPH (100micrograms IV over 1 minute)

## 1ST LINE MANAGEMENT OF PPH

### 5.4 Minor PPH blood loss 500 – 1000ml without clinical shock

**Alert labour ward coordinator, first line obstetric and anaesthetic staff**

Intravenous access one grey cannula

Urgent venepuncture: FBC, Group and Save, Coagulation screen including fibrinogen

Pulse, respiratory rate, blood pressure every 15 minutes

Commence warmed crystalloid infusion.

### 5.5 Major PPH blood loss more than 1000ml and ongoing bleeding or clinical shock

- ABC: assess airway and breathing; Oxygen 15L/min via facemask
- Evaluate circulation
- Position the patient flat
- Call for help – emergency buzzer – request Labour Ward Coordinator, Obstetric Registrar and Anaesthetist. Consider need for additional help – call 2222 for Obstetric emergency call to be put out – Alert Consultant Obstetrician and Consultant Anaesthetist.
- Assign a scribe to document events on proforma
- Give immediate clinical treatment :
    - Uterine massage “rub up a contraction”, bimanual compression if required
    - Empty bladder – leave catheter in place and commence fluid balance chart
    - Uterotonic drugs – see below for options
    - Establish two 16g cannula, take bloods for full blood count, coagulation screen, renal and liver baseline and cross match packed red cells (4units).
    - Volume replacement: involves restoration of both blood volume and oxygen carrying capacity.
    - As rapidly as possible give 2L of warmed Hartmann’s solution, followed by a further 1.5L of warmed colloid if blood is not available.
    - Blood transfusion: the decision should depend on the clinical picture and haematological assessment. Near patient estimation of Hb can be misleading. Institute the Major Obsteric Haemorrhage with the trigger phrase if bleeding is more than1.5 L and ongoing. Aim to maintain Hb.80g/l, platelets more than $50*10^9$/L, PT less than1.5 times normal, APTT less than1.5 times normal and fibrinogen more than2g/l
    - Transfuse 4 units RBCs, FFP should be infused at a dose of 12-15ml/kg until haemostatic tests are known at 6:4 RBC:FFP. There is no evidence that the formulaic protocol of 1:1 improves outcome in PPH. ( risk of unnecessary coagulation correction as it was normal and increased risk of transfusion associated circulatory overload
    - Controlled cord traction if placenta has not yet been delivered – remove any clots or remaining tissue
- Continuously assess blood loss – weigh swabs and clots and keep a contemporaneous estimate of blood loss

- Continuously assess the woman's condition – blood pressure, pulse, oxygen saturations every 15 minutes initially then as required by early warning score, hourly urine output minimum 0.5ml / Kg/ hour

- Identify the source of the bleeding – consider the 4 T's as above.

- Documentation of fluid balance, blood, blood products and procedures.

- Consider physiological monitoring: arterial line/CVP

- Allocate a member of the healthcare team to stay with the woman and her birth companion(s), explain what is happening, answer any questions and offer support throughout the emergency situation

- **Active third stage: confirm that this has been given at delivery**

    - **Oxytocin bolus (10 units IM) or**
    - **Ergometrine bolus** or
    - **Combined oxytocin and ergometrine bolus- syntometrine (5units/500micrograms IM)**

- **1st LINE TREATMENT**

  No particular uterotonic drug can be recommended over any, options include:

    - Repeat bolus of
        - Oxytocin 5 units by slow IV injection (may have repeat dose)
        - Ergometrine (IM or slow IV) – do not give ergotmetrine if woman is hypertensive or in cases of retained placenta

    - Oxytocin infusion – **40 units oxytocin in 500ml 0.9% sodium chloride** at 125ml/hour unless fluid restriction necessary

    - **Carboprost (IM) – 250micrograms every 15 minutes** – Consultant must be involved if carboprost is required. Max 8 doses. (contraindicated if woman has severe cardiac/pulmonary/renal and hepatic disease)

    - Misoprostol – 1000 micrograms per rectum or 800micrograms sublingually ( this takes 1-2.5 hours to increase uterine tone)

  Assess the need for adjuvant options for managing significant continuing postpartum haemorrhage, including:

    - Tranexamic acid (intravenous)

  If pharmacological measures fail to control haemorrhage, surgical intervention should be initiated sooner rather than later

## 5.6 TRANSFER TO THEATRE

Perform examination under anaesthetic

- Ensure that the uterus is empty and repair any trauma
- Consider balloon tamponade as the first line measure for atonic uterus before surgical options

Be aware that no surgical procedure can be recommended over any other for treating postpartum haemorrhage

If the patient continues to bleed after immediate measures have failed, consider causes for on-going haemorrhage/ collapse. **See Appendix 3 for procedures in theatre**

- B Lynch Suture **( keep laminated diagram of procedure in theatre). A second experienced clinician should be involved at this stage if not already present. Compress aorta as a temporary but effective wait to allow resuscitation to catch up and surgical support to arrive.**
- Stepwise devascularisation and internal iliac artery ligation. Involve Vascular surgeons
- resort to hysterectomy sooner rather than later

## 5.7 PROCEDURE FOR COLLECTION OF BLOOD FROM BLOOD BANK

Emergency O negative blood

- N.B. 2 units of blood are held in the issue fridge for use in a true emergency situation that cannot wait for issue of suitable blood.
- In this situation inform the blood bank staff that you are removing it.
- Retrieve the blood.as per trust protocol
- Complete the white form issued with the first unit with details of the patient receiving the blood.
- Return the form to the blood bank as soon as possible.

**All other situations:-**

- Once labour ward has been informed by haematology that blood is available an available member of staff is sent to blood bank with patients full name, date of birth and CRN number – all on Transfusion pathway.
- When blood is removed from fridge it is signed out on computer system - all staff to have training and be issued with user password.
- Blood is transferred in blood box and kept in there until it is to be used (must be returned to blood bank if the intention is not to transfuse it within 4 hours and this must be performed before it has been out of the fridge for 30 min).
- Follow hospital policy for the correct administration and recording of blood on transfusion pathway.

## CARE AFTER MAJOR HAEMORRHAGE

- Women should remain on delivery suite for 24 hours after bleeding has resolved or after transfer from ITU.

- Continue four hourly observations until discharge.
- Medical Review before discharge.
- A safeguard report should be completed for any blood loss over 1500ml or any fall in heamoglobin to less than 80g/l

## 5.8 DEBRIEFING AND FOLLOW UP

**An opportunity to discuss the events surrounding the obstetric haemorrhage should be offered to the woman possibly with her birthing partner at a mutually convenient time.** Address future pregnancy/ risk of recurrence. Arrange appropriate investigations – coagulopathies/ screening for rare complication – Sheehans syndrome secondary to hypotension.

Debriefing is recommended by a senior member of the team who was involved at the time of events at the earliest opportunity.

A follow up appointment should be offered to the woman postnatally when necessary

## 5.9 WOMEN WHO DECLINE BLOOD PRODUCTS

- All women who decline blood products should be Consultant care and should be seen by the Consultant during the antenatal period to discuss an individual management plan – a clear written plan must in the hospital and hand held notes.
- An Advance Directive must be signed and carried in the hand held notes.
- Haemaglobin and serum ferritin should be checked regularly. Hemanitics must be given throughout the pregnancy to enhance iron stores.
- The Consultant Obstetrician and anaesthetist should be made aware of the admission to labour ward any woman who declines blood products and the plan should be reviewed. A clear plan of care should be made if the woman has a post partum haemorrhage.
- Oxytocics should be given when the baby is delivered. The woman should not be left alone for at least one hour after delivery.
- If Caesarean Section is necessary, it should be carried out by the consultant obstetrician/anaesthetist if possible. If Haemorrhage occurs, avoid delay in starting pharmacological methods. The threshold with regard to surgical intervention should be lower than in other patients. Consider vitamin K and tranexemic acid after discussing with haematologist.

## 5.10 CELL SALVAGE

- At present the cell saver is not used for emergency haemorrhage but consideration should be given to its use intraoperatively in elective surgery where major blood loss is anticipated (Caesarean Section for placenta accreta) – Liaise with theatre staff to make arrangements for this.

## 5.11 SEVERE SECONDARY PPH

**Causes are numerous and include endometritis, RPOC and subinvolution of the placental implantation site.**

Management should include assessment of haemodynamic status, assessment of blood loss and an evaluation of the womans concerns

- Base line observations – Temp, Pulse, Respirations and Blood Pressure.

- Adequately resuscitate and give Ergometrine 500micrograms (unless hypertensive) and Oxytocin infusion as above.
- Consultant Obstetrician to be informed.
- High vaginal and endocervical swab.
- Blood – FBC, Cultures, U&E,CRP and lactate if Pyrexial - Sepsis Bundle
- IV antibiotics – see Trust Formulary http://intranet/directorates/CCG/ALTC/Pharmacy/AntibioticFormulary for 24 hours if possible. Consider gentamicin if tender uterus – Consultant Obstetrician to discuss with Consultant Microbiologist
- Senior Obstetrician should be undertake or supervise surgical evacuation of retained products of conception. Risks include uterine perforation and Asherman's Syndrome

### 5.12 Risk Management

- Continuous audit as below - The results of the audit undertaken will be forwarded to the Clinical Director/Services Manager and Matrons within the directorate for discussion and review. Themes will be identified and explored.
- All PPH.1500ml should be subject to a clinical incident review
- Training in the management of all birth attendants in the management of PPH
  - Mandatory annual training for all staff –record to be kept
- Rehearsals of major PPH
- It is the responsibility of the directorate to develop action plans for areas of poor performance. Copies of action plans developed will be made available to Clinical Governance Committee.

# 6. MONITORING AND PERFORMANCE

### 6.1 Compliance and Effectiveness Monitoring

Compliance with this policy will be monitored as outlined in the table below.

### 6.2 Compliance and Effectiveness Table

| **Monitoring Criterion** | **Response** |
|---|---|
| Who will perform the monitoring? | Maternity Services |
| What are you monitoring? | a. There is evidence of clear lines of communication between the consultant obstetrician, consultant anaesthetist, haematologist, blood transfusion personnel and labour ward coordinator.<br>b. Clear documented evidence describing of the management of women with a postpartum haemorrhage.<br>c. Evidence that a fluid balance chart has been completed.<br>d. Facilities for urgent access to blood.<br>e. That a clear trigger phrase has been used to activate massive haemorrhage protocol.<br>f. Evidence documented of an individual management plan |

| | |
|---|---|
| | in the health records of women who decline blood products.<br>g. For maternity service's expectations for staff training, as identified in the training needs analysis.<br>h. Process audited in laboratory to ensure compliance of massive blood loss policy. |
| When will the monitoring be performed | • Included in rolling audit calendar<br>• Weekly risk meetings<br>• Quarterly safeguard report<br>• Action immediately by Blood Transfusion Practitioner |
| How are you going to monitor? | • Review of maternity records<br>• Trust Transfusion Committee |
| What will happen if any shortfalls are identified? | Results of review shared with Obs & Gynae Assurance meeting – Action plan agreed and disseminated |
| Where will the results of the monitoring be reported? | Obs and Gynae Governance Meeting |
| How will the resulting action plan be progressed and monitored? | Obs & Gynae Assurance meeting<br>Progressed by Transfusion Practitioner Team – monthly at Transfusion Team Meeting. Quarterly at Trust Transfusion Committee. |
| How will learning take place? | Mandatory days<br>Changes to practice & re-auditing<br>Outcomes shared on Transfusion intranet page |

Attendance at essential training is recorded by People & Organizational Development and entered onto the Trust Training Management System, OLM. Monitoring of non attendance will be in line with the Training Needs analysis, Monitoring and Evaluation Policy and carried out by People & Organizational Development. Please refer to this policy for detailed information

# 7. REFERENCES

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Saving Lives, Improving Mothers Care. Surveillance of maternal deaths in the UK 2011-13 and lessons learned learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2009 13. Dec 2015 MBRRACE - UK

# 8. ASSOCIATED DOCUMENTS

**This guideline should be read in conjunction with the following:**

CDDFT Manual Removal of Placenta GUID/MAT/1407
CDDFT Maternal Transfer by ambulance GUID/MAT/1016
CDDFT Women who refuse blood products – Trust Policy
CDDFT Postnatal recovery following caesarean or other operative procedure GUID/MAT/1501.
CDDFT Blood Transfusion Policy (TRUST)
CDDFT Antepartum Haemorrhage.GUID/MAT/1013
Protocol for the use of Recombinant Activated Factor VII in major Haemorrhage

This policy refers to the following guidance, including national and international standards:

Postpartum haemorrhage: Prevention and Management. RCOG Green Top Guideline No.52

# 9 APPENDICES

Appendix 1 - PPH proforma

Appendix 2 - Preventing/ minimising haemorrhage

Appendix 3 - Further measures in theatre

Appendix 4 - Massive haemorrhage flow chart

Appendix 5 – Equality Impact Assessment

## 9.1 Appendix 1 – PPH Proforma

**PPH Proforma**

| Action | Time | Signature |
|---|---|---|
| Assistance Called – 2222 | | |
| SHO Attended | | |
| Registrar Attended | | |
| Anaesthetist Attended | | |
| Syntocinon 10 units IM given | | |
| Ergometrine 500 micrograms given IV/IM | | |
| Canula 1 sited by | Canula 2 sited by | |
| Blood Obtained FBC/Cloting/U&E/LFT | | |
| Group and Save/Cross match 4 units | | |
| Oxytocin 40 units in 500ml Sodium Chloride 0.9% - 125ml/hour | | |
| Catheter Inserted | | |
| IV Fluids commenced/Fluid Balance Chart | | |
| Check Placenta complete | | |
| Carboprost 0.25mg IM Time Given | | |
| Misoprostol 1000 micrograms inserted PR | | |
| Tranexemic acid given 1 IV | | |
| Examine for tears | | |
| Consultant informed (loss > 1500ml) | | |
| Trigger phrase instigated/Haematologist informed | | |
| Transferred to Theatre Yes/No | | |
| Tamonade balloon inserted | | |
| Estimated EBL | | |
| Debrief | | |
| Safeguard Form Completed | | |

## 9.2 Appendix 2 – Preventing/Minimising Haemorrhage

- All staff require regular training on identification and management of maternal collapse, including the identification of hidden bleeding and the management of haemorrhage, (CEMACH).
- Active management of the third stage reduces the risk of PPH
- Prophylactic oxytocics reduce the risk of PPH by 60%
- **Identification of high risk Groups** - Most cases of PPH have no identifiable risk factors but clear written care plans should be put in place for those women where risk factors are present antenatally or intrapartum. High risk groups include:
  - Previous retained placenta or PPH
  - Suspected placenta accreta/percreta
  - Women who decline blood products
  - Multiple pregnancy
  - Women with clotting disorders or on therapeutic anticoagulants
  - Polyhydramnios
  - Macrosomia/suspected big baby
  - Age more than 40
  - Grand Multiparity more than 4
  - Obesity (BMI more than35)
  - Pre-eclampsia or PIH
  - APH
  - Low maternal Hb below 9 g/l at onset of labour
  - Induction of labour or oxytocic use during labour
  - Prolonged labour (more than 12 hours)
  - Caesarean section
  - Instrumental delivery
  - Shoulder dystocia

- **Women in the above categories should be considered for the following:**
  - Intravenous access established at onset of labour.
  - FBC, blood group and save serum should be sent to the laboratory urgently.
  - Consider Syntometrine (Ergometrine 500micrograms and Oxytocin 5units per ml) for the third stage **(excluding PIH / pre eclampsia).**
  - An Oxytocin infusion should be prepared so that it is ready if necessary (40 units of Syntocinon in 500ml Sodium Chloride 0.9% at 125 ml/hour). Consider the prophylactic use of a Syntocinon infusion.
  - Ergometrine 500micrograms available in delivery room (caution with PIH / Pre eclampsia)

## 9.3 Appendix 3

Further Measures in Theatre for Management of Atonic Uterus if Continued Bleeding

**Resort to hysterectomy sooner rather than later especially in the cases of placenta accrete or uterine rupture**

**A second Consultant should be involved in the decision for hysterectomy**

**a. EUA**

Check for tears or retained placenta

**b. Tamponade Balloon (Intra Uterine Catheter)**

This device is intended as a means of establishing haemostasis in cases indicating conservative management of postpartum uterine bleeding.

The balloon portion of the Tamponade is inserted through the internal os or abdominally at Caesarean Section (the incision is then closed normally).

An indwelling Foleys catheter should be in place whilst the Tamponade is in place and fluid balance closely observed.

The balloon of the Tamponade is inflated with sterile water up to about 350mls; the fluid capacity of the balloon is 500ml. There is a 50ml syringe included in the packaging to inflate the balloon. Record the amount of sterile water used.

Patient's vital signs should be monitored for signs of increased bleeding and uterine cramping.

The balloon can be left in for up to 24 hours.

**Tamponade balloon removal:** After about 6 hours (but during day light hours): If stable and bleeding settled disconnect from drainage bag and flush with 50mls normal saline. Remove 50mls and then remove 50 mls every 6 hours with the remainder out at 24 hours. (Maximum indwelling time is 24 hours). Consultant to be involved in timing of this.

- Remove tension from balloon shaft.
- Remove any vaginal packing.
- Gently retract the balloon from the uterus and vagina and discard.
- Monitor patient for signs of bleeding.

**c. The B-Lynch Suture**

i) General anaesthesia, urinary catheter in place. The patient should be in the Lloyd Davies position.

ii) Pfannensteil incision usually adequate.

iii) Lower segment uterine incision (as for caesarean section) made after dissecting off bladder.

iv) Bimanual compression of the uterus to assess the potential chance of success of the B-Lynch suturing technique. If bimanual compression controls the bleeding as observed vaginally, can then use this technique

v) A no.2 absorbable suture on a round bodied needle is used to puncture the uterus about 3cm below the right hand corner of the lower segment incision and brought

about 3cm above the same corner ( as one would place the first suture when closing this corner of the incision)

vi) From this point the suture is passed over the right hand corner of the uterus, approximately 3-4cm. From the right corneal border, where it may be fixed to prevent it from slipping off the fundus and then fed posteriorly and vertically down to the same level where the suture has previously left the uterine cavity from anterior.

vii) The suture is then placed through the posterior uterine wall into the cavity under direct vision of the Surgeon and back through the posterior wall about 4-5cm. Left of the previous entry site.

viii) With the suture outside the posterior of the uterine cavity at this stage, it is now passed over the left hand cornu, approx 3-4cm. From the left cornual border, where again it may be fixed to the fundus, then fed anteriorly and vertically down to the level of the corner of the lower segment incision.

ix) The needle is then passed through the left corner in the same fashion as on the right hand side, to emerge below the incision margin on the left side.

x) With the suture now in place, the assistant bimanually compresses the uterus while the Surgeon pulls the chromic suture taught.

xi) If a third person confirms that the bleeding is controlled (as observed vaginally), the Surgeon ties the suture to keep it in position and closes the lower segment uterine incision.

**d. Uterine Artery Ligation**

Use large tapered needle (mayo type), No. O or 1 absorbable suture

Place around ascending uterine artery and vein, just below the normal site of a low transverse uterine incision, pass through myometrium, anterior to posterior, 2cm medial to the lateral edge of the uterus. Redirect the suture posterior to anterior through the avascular space in broad ligament. Tie suture. Repeat on the opposite side. Further sutures may be required higher up.

**e. Recombinant factor VIIa (rFVIIa)** (see trust policy)

In the case of life-threatening haemorrhage and in consultation with the Consultant Haematologist, rFVIIa may be used as an adjunct to standard surgical procedures and standard pharmacological treatments

**f. Interventional radiology is currently not available in the Trust**

# CDDFT OBSTETRIC MASSIVE HAEMORRHAGE PROTOCOL (MHP)

## STEP 1
### Phone

**UHND Blood Bank 32443**
**or DMH Blood Bank 43167**
**Out of hours call UHND bleep 32098, DMH #6648**

**Tell the Blood Transfusion laboratory BioMedical Scientist (BMS) staff:**

- **'To Instigate Massive Haemorrhage protocol'**

For
- Patient Full Name (where available- must have unique ID)
- Hospital number
- Sex and date of birth

Give
- Name and contact telephone number for doctor in charge

## STEP 2
### Specimens Required on Admission

**Send samples to appropriate laboratory:**

Pre-transfusion testing samples required:

- 6mL EDTA Transfusion specimen (Pink Top)
- Full Blood Count (Purple Top)
- Coagulation screen (Blue Top)

## STEP 3
### Specimens Required on Receiving MH Packs

**Send samples to appropriate laboratory:**

With all MH packs, REPEAT:

- Full Blood Count (Purple Top)
- Coagulation screen (Blue Top)
- EDTA transfusion sample (pink top)
- Review calcium result and Consider using 10mls Calcium Chloride 10% over 10 minutes

## Red Cells Needed Immediately

**Use EMERGENCY O Negative red cells in designated fridge**

**NOTE**: If the patient has antibodies (esp. Anti-c and Anti-e) this blood may not be suitable; you MUST contact the laboratory immediately.

## Patient with HISTORIC Blood Group RECORD

If the patient has a **historic record** and a **valid group and screen** sample, **group specific blood** can be **made available** immediately by **electronic issue** unless the patient has red cell antibodies when a full serological cross match will be required.

**Initial MH pack**
- 4 units Red Blood Cells (group specific)
- 4 units FFP (group specific)

**In massive blood loss use blood warmer for red cells only**

## MH Pack Requested No Blood Group

**Initial MH pack**
- 4 units Red Blood Cells (group O)
- 4 units FFP (group AB)

(N.B FFP takes 20 minutes to defrost)

A group, antibody screen and crossmatch will be carried out on the released units within 40 minutes

## MH Protocol

**Second MH pack**
- 4 units Red Blood Cells (grou specific)
- 4 units FFP (group specific)
- 1 Platelet pool (group specific)

**Subsequent MH pack**
- 4units Red Blood Cells (grou specific)
- 4 units FFP (group specific)
- 1 Platelet pool (group specific)
- 2 pools Cryoprecipitate (Mainta Fibrinogen >1.5 g/dL)

**If bleeding continues uncontrolled, consider antifibrinolytic or recombinant factor VIIa after discussion with a Haematology Consultant via Switchboard.**

**STAND DOWN**
Inform lab
Return unused components

## NOTES

An antibody screen will be carried out within 40 minutes of receipt of the sample

**FEMALES**:
O RhD Negative red blood cells are usually in very short supply. A sample should be sent to the blood bank ASAP to allow conversion to group specific red blood cells.

## 9.5 Appendix 5 – Equality Impact Analysis/Impact Assessment

**Full Assessment Form** **v2/2011**

| | |
|---|---|
| **Division/Department:** | **Family Health – Maternity Services** |
| **Title of policy, procedure, decision, project, function or service:** | **Post partum Haemorrhage** |
| **Lead person responsible:** | **Evidence Base Practice Group - chair** |
| **People involved with completing this:** | **T Saukila**<br>**K Hooper** |

**Type of policy, procedure, decision, project, function or service:**

Existing Yes ☐

New/proposed ☐

Changed ☐

**Step 1 – Scoping your analysis**

**What is the aim of your policy, procedure, project, decision, function or service and how**

**does it relate to equality?**

| |
|---|
| **To ensure women have the safest care that can be given** |

**Who is the policy, procedure, project, decision, function or service going to benefit and how?**

| |
|---|
| **Women at risk of postpartum haemorrhage, reduce the risk of massive obstetric haemorrhage** |

**What outcomes do you want to achieve?**

| |
|---|
| **No incidents – good outcome – good experience for women and their families** |

**What barriers are there to achieving these outcomes?**

| |
|---|
| **Not adhering to guidelines and policies - non attendance at training and education** |

**How will you put your policy, procedure, project, decision, function or service into practice?**

| |
|---|
| **Monitoring incidents and ensuring lessons are learned** |

**Does this policy link, align or conflict with any other policy, procedure, project, decision, function or service?**

| |
|---|
| **Trust massive haemorrhage protocol**<br>**Women who decline blood products**<br>**Use of recombinant factor vii** |

## Step 2 – Collecting your information

**What existing information / data do you have?**

| |
|---|
| **Incident data** |

**Who have you consulted with?**

| |
|---|
| **Clinical colleagues, Blood Transfusion, Pharmacy** |

**What are the gaps and how do you plan to collect what is missing?**

| |
|---|
| **N/A** |

## Step 3 – What is the impact?

**Using the information from Step 2 explain if there is an impact or potential for impact on staff or people in the community with characteristics protected under the Equality Act 2010?**

**Ethnicity or Race**

| |
|---|
| No |

**Sex/Gender**

| |
|---|
| No |

**Age**

| |
|---|
| No |

**Disability**

| |
|---|
| **No** |

**Religion or Belief**

| |
|---|
| **No** |

**Sexual Orientation**

| |
|---|
| **No** |

**Marriage and Civil Partnership**

| |
|---|
| **No** |

**Pregnancy and Maternity**

| |
|---|
| **No** |

**Gender Reassignment**

| |
|---|
| **No** |

**Other socially excluded groups or communities e.g. rural community, socially excluded, carers, areas of deprivation, low literacy skills**

| |
|---|
| **No** |

## Step 4 – What are the differences?

**Are any groups affected in a different way to others as a result of the policy, procedure, project, decision, function or service?**

| |
|---|
| **No** |

**Does your policy, procedure, project, decision, function or service discriminate against anyone with characteristics protected under the Equality Act?**

**No**

**If yes, explain the justification for this. If it cannot be justified, how are you going to change it to remove or mitigate the affect?**

| |
|---|
| **N/A** |

## Step 5 – Make a decision based on steps 2 - 4

**If you are in a position to introduce the policy, procedure, project, decision, function or service? Clearly show how this has been decided.**

| |
|---|
| **Agreed at Obstetrics and Gynaecology Operational Group, Reviewed at Family Health Patient Safety Committee and Clinical Standards and Therapeutics Committee and approved at the IQAC** |

**If you are in a position to introduce the policy, procedure, project, decision, function or service, but still have information to collect, changes to make or actions to complete to ensure all people affected have been covered please list:**

| |
|---|
| **N/A** |

**How are you going to monitor this policy, procedure, project or service, how often and who will be responsible?**

| |
|---|
| **Maternity services – Safeguard reporting – weekly risk management meetings – review of notes** |