Postpartum Haemorrhage Management

University Hospitals of Leicester NHS Trust

Trust ref: C38/2011 Previously C38/2011& C24/2011

1. Introduction and Who Guideline applies to

This document sets out the procedures and processes to follow in the Obstetric emergencies listed below with the intention of providing safe and effective care to these patients.
These guidelines are for the use of all staff involved in the management of Postpartum Haemorrhage. This includes midwifery, obstetric, anaesthetic, pharmacy, 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 which can be found in the appendix of the Incident and Accident Reporting UHL Policy for details.

Contents

Related documents:
Incident and Accident Reporting UHL Policy
Enhanced Maternity Care UHL Obstetric Guideline
Declining Blood and Blood Products UHL Obstetric Guideline
Maternity Records Documentation UHL Obstetric Policy
Patient Health Records - Documenting UHL Policy
Maternal Death UHL Obstetric Guideline
Last Offices Care of the Deceased UHL Policy
Surgical Swabs Instruments Needles and Accountable Items UHL Policy Blood Transfusion UHL Policy
Cardiopulmonary Resuscitation Policy UHL LLR Alliance LPT

What's new?

- **Factors predisposing to PPH – pre labour Hb changed from <85g/l to <95g/l, removed uterine anomalies, physiological 3rd stage and age as risk factors.**
- **Swabs & pads must be weighed for blood loss estimation at ALL births.**
- **When requiring emergency transfer, transfers should be directed to the LRI or nearest available hospital that provides level 3 intensive care facilities.**
- **When >1000mls blood loss OR clinical concern of abruption or concealed bleeding OR abnormal vital signs (RR>30, HR≥120bpm, BP≤90/40mmHg, SpO2<95%) perform TEG 6**
- **Activate MOH at 1500ml blood loss, volume reduced from 2000ml**
- **Uterine tone added to vital signs to monitor during MOH**
- **Fluid therapy changed from 2 litres normal saline to Crystalloid - Up to 3 litres Hartmanns**
- **Guidelines for the use of Carboprost (Hemabate®) added**
- **Secondary PPH guidance added**
- **Early discussion with HDU/ITU Consultant particularly where post-operative ventilation is anticipated (LGH patients will need to be transferred to LRI)**
- **NEW PPH Risk assessment and management pro forma**

2. Guidance:

2.1 Definition:

Primary postpartum haemorrhage (PPH) is the loss of 500 ml of blood or more from the genital tract within the first 24 hours of the birth of a baby. The risk of significant morbidity is higher, even with smaller volumes of blood loss, in pregnant women and people with anaemia and low body weight <55kg.

>500-1000 ml = Minor PPH (requires basic measures)
>1000 ml = Major PPH, subdivided into;
>1000 -1500 ml = Moderate PPH (requires full protocol of measures)
>1500 ml = Massive PPH (invokes trigger phrase)

Secondary postpartum haemorrhage is abnormal bleeding from the birth canal between 24 hours and 12 weeks after birth. (RCOG green top guideline No 52; 2016)

Uterine atony accounts for 75% – 90% of postpartum haemorrhages, while trauma and

retained placenta account for the majority of the remainder.
Consider unseen/hidden bleeding, especially if clinical signs of shock are present such as tachycardia, hypotension.

2.2 Factors predisposing to postpartum haemorrhage:

In the antenatal period

- Known abruption or Antepartum haemorrhage
- Bleeding disorder
- Large uterine contents (as in multiple pregnancies, polyhydramnios, large baby estimated fetal weight >4.5kg)
- Previous postpartum haemorrhage >1 litre
- Abnormal placental implantation
- High parity ≥5 vaginal births
- BMI <18 or >35 or booking weight <55kg
- Previous uterine surgery
- Anaemia (less than 95g/l) at onset of labour
- Polyhydramnios

In labour

- Prolonged 1st, 2nd or 3rd stage
- Use of Oxytocin
- Operative delivery
- Suspicion of chorioamnionitis/sepsis
- Retained placenta

For pregnant women and people who decline blood products refer to the Antenatal and Intrapartum Care Plans. Also see Declining Blood and Blood Products UHL Obstetric Guideline.

2.2.1 Considerations in Midwife-Led birth settings

Evidence suggests an active third stage of labour reduces the incidence of postpartum haemorrhage. Midwives undertaking physiological management of the third stage must be skilled in this practice and the pregnant woman or person counselled as to the risks and benefits.

When planning place of birth pregnant women and people should be screened for predisposing factors and advised against birthing at home or in the stand alone Midwife Led Unit setting where appropriate. Pregnant women and people choosing to birth at home against advice should be counselled as to the risks associated with their clinical history and birth setting and a plan of care made in association with the Midwife, Consultant Midwife and Obstetrician to help minimise the risks where possible. This should include an intrapartum care plan.

Checklists (Home birth checklist, appendix 5, and Intention to birth at St Mary's Birth Centre form, appendix 6) should be completed for pregnant women and people planning to birth at home or free-standing midwife led unit to confirm that the pregnant woman or person is aware of the limitations of the care setting.

A PPH risk assessment form (appendix 4) must be completed at the onset of labour to assess risk of PPH.

Equipment

St Mary's Birth Centre:

- Emergency trolley, portable oxygen, suction and defibrillator must be checked daily and documented in the daily checking file
- The patient hoist must be serviced 6 monthly
- Birth Centre Midwives must check the emergency equipment daily. This should be documented in the area's daily checks record

Homebirth team:

- The equipment and drugs midwives carry for emergencies in the community setting must be checked on a daily basis and after each use. This must be documented in their diary.

2.3 Signs and Symptoms of Obstetric haemorrhage:

Optimal management is to measure and record all blood loss at every delivery.
For deliveries in the pool, estimation may be required.
There is good evidence that clinical staff underestimate blood loss at delivery by up to 40%.

Persistent 'trickling' over several hours can result in substantial loss.
Suturing of genital tract trauma requires concentration and is a time when the volume of blood loss can be underestimated. It is good practice that another member of staff is available to weigh swabs during suturing to accurately measure blood loss.

Our aim is to identify haemorrhage by measuring blood loss, not waiting for clinical signs such as a rising heart rate or decreasing blood pressure.

The Confidential Enquiry (MBRRACE UK Nov 2022) has also identified slowness of response to early clinical signs of shock as a contributing factor.

Key signs of significant obstetric haemorrhage are:

1. Rising pulse rate
2. Pallor
3. Fall in blood pressure
4. Shock

2.4 Initial management of Primary PPH:

The management of major PPH requires a multidisciplinary approach with rapid and clear, accurate communication between clinical specialities.

The initial management will be dependent on the care setting. A PPH pro-forma (appendix 4) must be commenced with actions documented.

2.4.1 Initial management in the free standing Midwife-Led Unit and home settings

Once blood loss of >500mls with on-going bleeding has been identified, management involves four components, all of which must be undertaken simultaneously:

- communication
- resuscitation
- monitoring and investigation

- arresting the bleeding

The following actions may occur concurrently dependent on staff in attendance.

- Call for assistance:

  - Call 2nd midwife and other available staff e.g. MCA
  - Dial 999 for all ambulance transfers

Free standing Midwife-Led unit to hospital

Communicate clearly that the transfer is an "OBSTETRIC EMERGENCY, CRITICAL TO LIFE OF MOTHER AND BABY" (Essentially the first question you will be asked is: "Do you need OUR clinical help right now to deliver an immediate life-saving intervention / or are you declaring an obstetric emergency?" If the answer is yes to this it will get a category 1 response).

Home to hospital

Communicate clearly that the transfer is an "OBSTETRIC EMERGENCY, CRITICAL TO LIFE OF MOTHER AND BABY". Transfers should be directed to the LRI or nearest available hospital that provides level 3 intensive care facilities.

If the Midwife is not present in the home when making the call (i.e. the PPH occurs after the midwives have already left), ambulance control must be informed that the birthing woman or person has been assessed by a Midwife over the phone and requires priority one transfer as critical to life of mother and baby (fastest response time).

- The decision to request a paramedic is made by the Midwife in charge of the case and she should be aware that this request might significantly delay the arrival of the ambulance.
- Inform Delivery Suite Co-ordinator in Consultant unit of transfer. Confirm appropriate hospital for place of transfer.
- Under no circumstances should the mother be left unattended by the Midwife.
- Communication with the birthing woman or person and their birthing partner is important and clear information of what is happening should be given from the outset.

Basic measures to be used in the community setting

- If placenta is in situ-ensure Syntometrine 1 ml IM (500 micrograms ergometrine /5IU oxytocin) has been administered and attempt to deliver using controlled cord traction.
- Palpate uterus and rub-up contraction.
- Empty bladder and insert Foley's catheter.
- Record blood loss by weighing swabs and linen.
- Determine cause of bleeding - tone trauma, or tissue. Consider thrombin if other causes eliminated.

<u>Specific uterine atony</u>

- Ensure bladder is empty. Insert a Foley's catheter as necessary and leave in situ.

- Ensure 1st dose of Syntometrine 1ml (500 micrograms ergometrine /5IU oxytocin) IM has been given.
- Administer 2nd dose of Syntometrine 1ml (500 micrograms ergometrine /5IU oxytocin) IM after 5 minutes.
- Perform bimanual compression of uterus if bleeding continues despite above measures.
- Check placenta for completeness.

Well contracted uterus

(N.B Bleeding could be due to lower segment atony; therefore actions recommended for uterine atony should not be dismissed when a well contracted uterus is palpated).

- Check for and repair bleeding episiotomy or tears.
- If the extent of the trauma or environmental factors prevent the immediate repair, direct pressure should be applied during transfer.
- Any swabs used must be x-ray detectable, recorded and accounted for as per Surgical Swabs Instruments Needles and Accountable Items UHL Policy.
- For blood loss >1000 mls, continued blood loss and clinical shock commence resuscitation as per ABCDEF.

On-going care

For blood loss of 500-1000mls the midwife should contact the Delivery Suite co-ordinator to formulate a plan of action. The plan should take into account the amount of blood loss, condition of the birthing woman or person, their vital signs/MEOWS score, symptoms, any active vaginal blood loss, and measures taken to manage the PPH to date.

- Monitor blood pressure, pulse and respiratory rate at a minimum of 15 minute intervals.
  - Complete on-going MEOWS score.
- Record fluid balance with particular emphasis on amount of blood loss.
- Consider IV cannulation with16 G cannula by paramedic or appropriately trained midwife.
  - Administration of warmed IV fluids.
- Consider oxygen.
- Documentation of actions taken and observations-consider allocating appointed person for this role where staff numbers permit.
- On arrival of paramedics:
  - IV access, bloods (FBC, group and save), fluid balance.
  - Contemporaneous record keeping, total blood loss.

Transfer to Consultant Obstetric Unit care

Follow guideline Intrapartum Care UHL Obstetric Guideline.

- The Midwife must be in attendance.
- Continued monitoring of vital signs
- Consider oxygen
- Baby to be transferred to Consultant Unit via separate travel arrangements
- Verbal and written hand over to delivery suite team using SBAR and document
- Ensure all care documented as contemporaneously as possible
- Submit Datix form

Integrated Midwife Led Unit (Orchard Birth Centre at LRI / Meadow Birth Centre at LGH), follow stages outlined below.

2.4.2 Management in Hospital setting

STAGE 1
Once blood loss of >500mls with on-going bleeding has been identified, management involves four components, all of which must be undertaken simultaneously:

- communication
- resuscitation
- monitoring and investigation
- arresting the bleeding

Get Help:

- Notify midwife in charge
- Request MCA to assist with measurement

Act:

- Measure and record blood loss
- Record observations every 10 minutes
- Insert IV cannula (16G or above) obtain blood for:
  - Full blood count
  - Group and Save

Think: what is the cause of bleeding?

- Tone
- Trauma
- Tissue
- Thrombin

Treat:

- Palpate the uterus and rub up a contraction
- Give uterotonics, first dose if not given, second dose if uterine atony suspected
- Empty the bladder and insert Foley's catheter
- Inspect genital tract
- Check placenta and membranes

Stage 2
>1000mls blood loss OR clinical concern of abruption or concealed bleeding OR abnormal vital signs (RR>30, HR≥120bpm, BP≤90/40mmHg, SpO2<95%)

Get Help:

- Midwife in charge
- Obstetric registrar or above
- Anaesthetic registrar or above
- MCA
- **All need to attend to the patient in the room**
- PPH trolley into room

Act:

- Measure and record cumulative blood loss
- Record observations every 10 minutes
- Insert 2nd IV cannula (16G or above) obtain blood for:

- Venous blood gas (Hb and lactate)
- FBC and Group and Save if not previously sent
- Coagulation including fibrinogen
- U&Es
- TEG 6

Review causes of bleeding: Tone/Tissue/Trauma/Thrombin

Treat:
- Give tranexamic acid 1g IV
- Review uterotonics
- Bimanual compression
- Consider omeprazole
- Insert Foley catheter
- Inspect and repair genital tract
- Check placenta and membranes. If partially or completely retained, transfer to theatre

2.5 Management of massive obstetric haemorrhage

Stage 3
>1500ml blood loss OR on-going clinical concern: transfer to theatre

Get Help:
- Midwife in charge
- Obstetric registrar or above
- Anaesthetic registrar or above
- MCA
- Inform obstetric and anaesthetic consultants
- Inform theatre team and transfer to theatre
- Alert porter / designated runner for delivery of specimens/blood

Act:
- Activate MOH protocol
- Nominate a Blood Bank "coordinator" for the duration of the incident (inform laboratory if this changes)
- Coordinator to dial **2222** and say "fast bleep Blood Bank"
- When Blood Bank staff ring back, coordinator will say' **Massive haemorrhage DECLARED'** (this triggers specific action in Blood Bank)

It is essential to communicate the clinical urgency to the lab by saying "Massive Haemorrhage DECLARED".
Give details of;
- Coordinators name
- Incident location e.g. delivery suite room 7
- Extension number (ideally with one alternative)
- Patient details
- Blood bank immediately to prepare MHP (Massive haemorrhage pack)
- Ensure require blood samples have been sent (See list in blood products section stage 2 above and appendix 4)
- Send "runner" to Blood bank **NOW** to wait for MHP

Blood is available either immediately (O negative), within 20 minutes of sample receipt (group compatible only) or 45 minutes fully cross match. Blood group antibodies may cause further delays.

For additional Haematology advice contact Haematology Registrar on 07960857172 Monday to Friday 9am to 5pm and out of ours contact via switchboard.

Review causes of bleeding: Tone/Tissue/Trauma/Thrombin

Treat:

- Review uterotonics
- Repeat tranexamic acid 1g IV if bleeding ongoing – note; 30 minute interval between first and second dose
- Administer blood products guided by TEG protocol, clinical observations and near patient Hb testing
- Consider advanced surgical techniques

The post-partum haemorrhage management checklist should be completed for all deliveries (appendix 4).
A member of staff should be designated to take responsibility for keeping accurate records of events, fluids, drugs, vital signs, and the results of any investigations. This may be the Midwife caring for the birthing woman or person, or the additional Midwife. The PPH pro-forma should be used where possible to assist accurate documentation with blood loss in excess of 1500ml but should also be used where blood loss is thought to be lower but massive haemorrhage is anticipated.

Record vital signs:

HDU trolley and monitor should be brought into the room if patient not in theatre
Monitor and document:

- Pulse rate and Blood pressure continuously using oximeter, electrocardiogram and automated blood pressure recording
- Fluid balance;
    - Urine output
    - Blood and blood products used
    - Blood loss
- Temperature every 15 minutes
- Blood gases
- Uterine tone
- Any procedures performed

Resuscitation, fluid replacement and Blood Products:

- Assess airway and give oxygen at 10 -15 L/min
- Assess breathing
- Evaluate circulation
- Position flat with head tilted or left lateral
- Keep birthing woman or person warm using appropriate available measures- use fluid warming devices and forced air warming blanket (e.g. Bair Hugger)
- Set up a second intravenous line using ideally a 16G cannula or larger

Fluid therapy and blood product transfusion:

- Fluid balance must be documented on HDU chart/ NerveCentre
- Wherever possible the administration of blood products should be based on laboratory investigations. *The risks and benefits of blood product therapy should be carefully considered. For birthing women or people who decline blood products refer to the Antenatal and Intrapartum Care Plans.*
- Crystalloid - Up to 3 litres Hartmanns solution (appropriately warmed)
- If unavailable, give uncross matched group specific blood OR give 'O RhD negative' blood. (and inform blood bank as soon as possible, requesting replacement)
- Do not give group O RhD negative blood to patients known to have anti-c antibodies.
- Use pressure bags/rapid infuser for rapid administration of fluids
- Administer blood and IV fluids through warming equipment – *do not use blood filters*

NB Suspected amniotic fluid embolism or abruption will require larger volumes of cryoprecipitate or fibrinogen

Specific management:

Specific management of the cause of the haemorrhage should be carried out simultaneously by the Obstetrician (rule out local bleeding).

Uterine Atony:

- Bimanual uterine compression
- Ensure bladder empty (leave Foley catheter in place)
- Oxytocin 5 units by slow IV injection (may have repeat dose)
- Ergometrine 0.5 mg by slow IV or IM injection (contraindicated in birthing women and people with hypertension or cardiac/vascular disease)
- Consider Intravenous infusion of 40 international units of Oxytocin in 36 ml sodium chloride 0.9% (made up to 40 ml sodium chloride 0.9%) over 4 hours and this may be repeated.
- Carboprost 250 mcg by IM injection repeated at intervals of not less than 15 minutes to a maximum of 8 doses (contraindicated in birthing women and people with severe asthma)
- **Misoprostol 800 – 1000 micrograms** rectally (can be used in birthing women and people with asthma). Repeat dosages should not be given within 2 hours.
- Shivering and fever are common side effects. Maternal pyrexia is usually self-limiting and responds well to Paracetamol. (If these occur, wait 6 hrs before repeating the dose). **This should only be used if the above drugs have been unsuccessful.**

Guidelines for the use of Carboprost (Hemabate®):

- Stored in the Obstetric Emergency boxes, in the Obstetric theatre refrigerator.
- Cautions: asthma, renal and hepatic impairment
- Can cause acute bronchospasm
- Give by deep intramuscular injection
- Dose: 250 micrograms, repeat after 15 minutes if necessary
- Do not exceed total dose of 2 mg (8 single doses)

2.6 Suspected or actual retained products:

- If retained placenta or placental tissue is suspected, arrangements should be made for transfer to theatre for evacuation of retained products once patient is stabilised.

2.7 Suspected surgical cause:

Adequate inspection of the lower genital tract is required to rule out genital tract trauma - use pressure if necessary to initially stop bleeding, then arrange formal repair.
Where bleeding occurs in theatre or the patient is transferred to theatre for surgical management, provision of cell-salvage should be discussed with the Consultant Anaesthetist and ODP- access should be available in or out of hours.

2.8 Surgical measures to control the bleeding:

Uterine tamponade:
Intrauterine balloon (Bakri balloon or Rusch catheter) is appropriate 'surgical' intervention for most birthing women or people where uterine atony is the only or main cause of haemorrhage.
- The balloon can be filled with sodium chloride with volume that varies between 250-500 ml.
- Ultrasound scan may be used to guide the process of insertion. It is advisable to use 50 ml syringe for inflation of the balloon.
- A vaginal pack is frequently inserted after the balloon
- It is recommended to observe bleeding and fundal height after insertion.
- Balloon can remain in-situ for up to 24 hours. An individualised plan should be made when inserted.
- Give prophylactic antibiotics until balloon is removed. Please see - Antimicrobial Summary UHL Womens Guideline
- For removal, deflate balloon by removing fluid with syringe. Once empty, balloon can be removed by gentle downward traction.

Where a vaginal pack and a Bakri Balloon is left in situ a "Bakri Intrauterine Balloon Insitu" form (appendix 3) must be completed and filed in the birthing woman's or person's hospital notes. An insitu sticker must also be placed on every history page within the notes. This is the responsibility of the operator who leaves the pack in. The pack must be removed prior to transfer to the postnatal ward.

Uterine haemostatic sutures:
- Current evidence from published case series and audits suggest that uterine compression suture can reduce the rate of hysterectomies in cases of major primary PPH.
- They include B-lynch suture, modified B-lynch or simple Brace suture, and multiple square sutures

Internal iliac artery ligation:
Current evidence suggests that the success rate of bilateral internal iliac artery ligation to control major primary PPH is <50%. Therefore, available balloon tamponade and haemostatic sutures may be simpler and more effective than internal iliac artery ligation

Failure of the above measures:

1. Selective arterial occlusion or embolisation by interventional radiology:

Interventional radiology may be available in emergency situations in some circumstances. It should be considered if the interventional radiologist is available and the general condition of the patient allows time for insertion.
The Interventional Radiologist on call should be contacted via switchboard.

2. Hysterectomy:
Subtotal hysterectomy may be sufficient in most cases to arrest haemorrhage.
Where hysterectomy is being considered a consultant Gynaecologist or Consultant Obstetrician and Gynaecologist should be present.
Surgeons should be aware of the high risk of bladder and ureteric injury and the potential need for a Urologist.
Ensure a Consultant Anaesthetist is aware and present.
Resort to hysterectomy sooner rather than later especially in cases of morbidly adherent placenta or uterine rupture.

Transfer:

Early consideration should be given to the advantages of transfer to an Intensive Care Ward or High Dependency Unit (see Enhanced Maternity Care UHL Obstetric Guideline)

Equipment:

Main Theatre:
- Rapid infuser
- Level 1 Blood Warmer
- Blood Cell salvage– on DS at LRI, COD at LGH
- Bair Hugger ® air warming device
- Ultrasound Scan machine at LRI on DS for obs and anaesthesia

ITU:
- Ultrasound Scan machine (LGH)
- Transport ventilator
- Transport monitor

2.9 Secondary PPH
(all the text below has been taken from RCOG Green Top Guideline 52 2016)

Secondary PPH is defined as abnormal or excessive bleeding from the birth canal between 24 hours and 12 weeks postnatally. Secondary PPH admission up to 6 weeks postpartum will be admitted to maternity, > 6 weeks will be admitted to gynaecology.
The causes of secondary PPH are numerous and include endometritis, Retained product of conception (RPOC) and sub involution of the placental implantation site.
The management of postnatal women and people presenting with secondary PPH should include an assessment of their haemodynamic status, an assessment of the blood loss and an evaluation of the postnatal woman's or person's concerns (for example, is their bleeding becoming inconvenient because it has persisted longer than they had expected?).

Investigations should include;
- Bacteriological testing for endometritis (high vaginal swab),
- Pelvic ultrasound scans are commonly performed on postnatal women and people presenting with secondary PPH to identify any RPOC. Since the range of sensitivities and specificities of ultrasound in the detection of RPOC is so wide, the clinical

findings, including the degree of bleeding and whether the cervical os is open, should be taken into account before the decision to undertake surgery is made.

Postnatal women and people presenting with secondary postpartum haemorrhage should be managed with broad spectrum IV antibiotics for 24 hours -unless bleeding very heavily- and then reviewed by a Consultant (please see - Antimicrobial Summary UHL Womens Guideline). If symptoms have settled and the uterus is well involuted, conservative management can be continued and no ultrasound is required.

If symptoms have not settled and/or clinically there is a high suspicion of retained products, an ultrasound should be requested.

Before arranging surgical evacuation of the uterus, the patient must be reviewed by the obstetric consultant. Surgical evacuation of the uterus for RPOC is not without morbidity and can result in uterine perforation (1.5%) and Asherman's syndrome.

- Broad spectrum antibiotics should be given for 24 hours minimum prior to ERPOC unless the bleeding is heavy.
- The procedure should be performed by a senior trainee with the Consultant present
- The procedure should be performed under ultrasound control.
- The procedure should either be performed on Delivery Suite (LRI and LGH) or theatre 18 at LRI

Uterotonics, such as misoprostol and ergometrine, have been recommended in the management of secondary PPH, although evidence to support their use is limited.

Transcatheter arterial embolization and balloon tamponade have been employed in cases of secondary PPH with ongoing bleeding

2.10 What care is required following the control of haemorrhage?

Following massive obstetric haemorrhage postnatal women and people should be cared for in an area equipped to provide HDU care. Early discussion with HDU/ITU Consultant particularly where post-operative ventilation is anticipated (LGH patients will need to be transferred to LRI). Documentation should be carried out on NerveCentre or ITU chart if transferred to Adult HDU / ITU unit.
Observations should be:

- every 15 minutes for 1 hour,
- every 30 minutes for 1 hour,
- hourly for six hours
- 4-hourly for 24 hours
- Uterine contraction should be maintained by an infusion of 40 international units of Oxytocin in 36 ml sodium chloride 0.9 % (made up to 40 ml run at 10 ml/hr).
- Repeat blood sampling should be individualised
- Postnatal transfusion should rarely be considered where the haemoglobin is more than 7g/dl, unless patient is symptomatic
- Postnatal women, people and their families should be offered an opportunity to discuss events with a senior member of the clinical team before discharge from hospital.
- Coordinator to call Blood Bank and state " Massive haemorrhage STAND DOWN"

2.11 Documentation:
Inadequate documentation in obstetrics can lead to potential medico-legal consequences.

It is therefore important to record the items listed below. Ideally these items should be documented on the available postpartum haemorrhage pro-forma (appendix 4) by the individual designated as a scribe.

- The staff in attendance and the time they arrived
- The sequence of events
- The timing of administration of different pharmacological agents given, their timing and sequence
- The time of surgical interventions where relevant
- The condition of the birthing woman or person throughout the different steps
- The timing of the fluid and blood products given

Document communication between Consultant Obstetrician, Consultant Anaesthetist, Haematologist, blood bank and Midwifery co-ordinator.

Where the postpartum haemorrhage occurs intra-operatively (e.g. during a Caesarean section) many of the personnel will already be present in theatre and fluid management and drug administration will be managed by the Anaesthetist in consultation with the operating surgeon. Under those circumstances appropriate documentation, including PPH pro-forma (appendix 4), in the patient's health records and on the anaesthetic/drug chart should be ensured.
An incident form should be completed in all cases where a PPH of >1500ml (as per RCOG recommendation) and/or where Massive Haemorrhage Protocol was activated.

2.12 Debriefing:

Obstetric haemorrhage, particularly where massive, can be traumatic to the postnatal woman or person, their family and the birth attendants: therefore debriefing is recommended by a senior member of the team who was involved at the time of events at the earliest opportunity.

Duty of candour:
All postnatal women and people with PPH should be debriefed once the clinical situation allows, this can be by the obstetrician (ST3+), or other senior members of the MDT. Postnatal women and people who have PPH in excess of 2000ml should have formal Duty of Candour. This should be recorded in the medical notes using the Duty of Candour sticker. Postnatal women and people should also be given a Duty of Candour letter (see appendix) which should be copied and filed in the hospital notes, and a copy sent to the risk team.

Case review:
These are based on a review of incident forms by the Risk Manager in conjunction with the clinical lead, and will include trend analysis where appropriate, 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.
If there is haemorrhage of more than 2000 ml the case will be reviewed to ensure that this guideline has been followed.

3. Training:

Training for staff in the management of postpartum haemorrhage is recommended by the Royal College of Midwives (RCM) and RCOG.
Annual “skills drills” for all members of staff (as per Training Needs Analysis).

4. Monitoring Compliance

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements
Audits of community midwives emergency equipment	Community team leads audit	Community midwifery matron	Monthly spot checks	Community midwifery shared drive
Daily checking of emergency equipment in birth centre	Community team leads audit	Community midwifery matron	Monthly spot checks	Matron for community midwifery
Incident review	Review of Datix	Team leads / ward managers	As occur	Datix system

5. Supporting References:

Based on the “Revised guidelines for the management of massive obstetric haemorrhage”, Department of Health (1994) Report on Confidential Enquiries into Maternal Deaths, HMSO.
Royal college of Obstetricians and Gynaecologists (2011) “Prevention and Management of Postpartum Haemorrhage ” London: RCOG

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:

1. Dewhursts Textbook of Obstetrics and Gynaecology for Postgraduates, 5th edition (1995) ed. C Whitfield, Oxford: Blackwell
2. Obstetrics (1989) eds. Sir Alex Turnbull, Geoffrey Chamberlain. Edinburgh: Churchill Livingstone
3. Obstetrics and the Newborn 3rd Edition (1997) eds. NA Beischer, EV Mackay, PB Colditz
4. Fundamentals of Obstetrics and Gynaecology 6th Edition (1998) Derek Llewellyn-Jones. London: Mosby
5. NICE cg 190 2014 (updated 20222) https://www.nice.org.uk/guidance/cg190/chapter/Recommendations#third-stage-of-labour
6. RCOG 2016. Green-top Guideline No. 52 Mavrides E, Allard S, Chandraharan E, Collins P, Green L, Hunt BJ, Riris S, Thomson AJ on behalf of the Royal College of Obstetricians and Gynaecologists. Prevention and management of postpartum haemorrhage.BJOG 2016;124:e106–e149.
7. https://www.npeu.ox.ac.uk/assets/downloads/mbrrace-uk/reports/maternal-report-2022/MBRRACE-UK_Maternal_MAIN_Report_2022_UPDATE.pdf
8. https://phw.nhs.wales/services-and-teams/improvement-cymru/our-work/maternity-cymru/obs-cymru/

6. Key Words

Carboprost, Ergometrine, Misoprostal, Oxytocin, Primary postpartum haemorrhage, Secondary postpartum haemorrhage, Syntometrine, Tranexamic acid, Uterotonics, Uterine atony

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The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.
As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

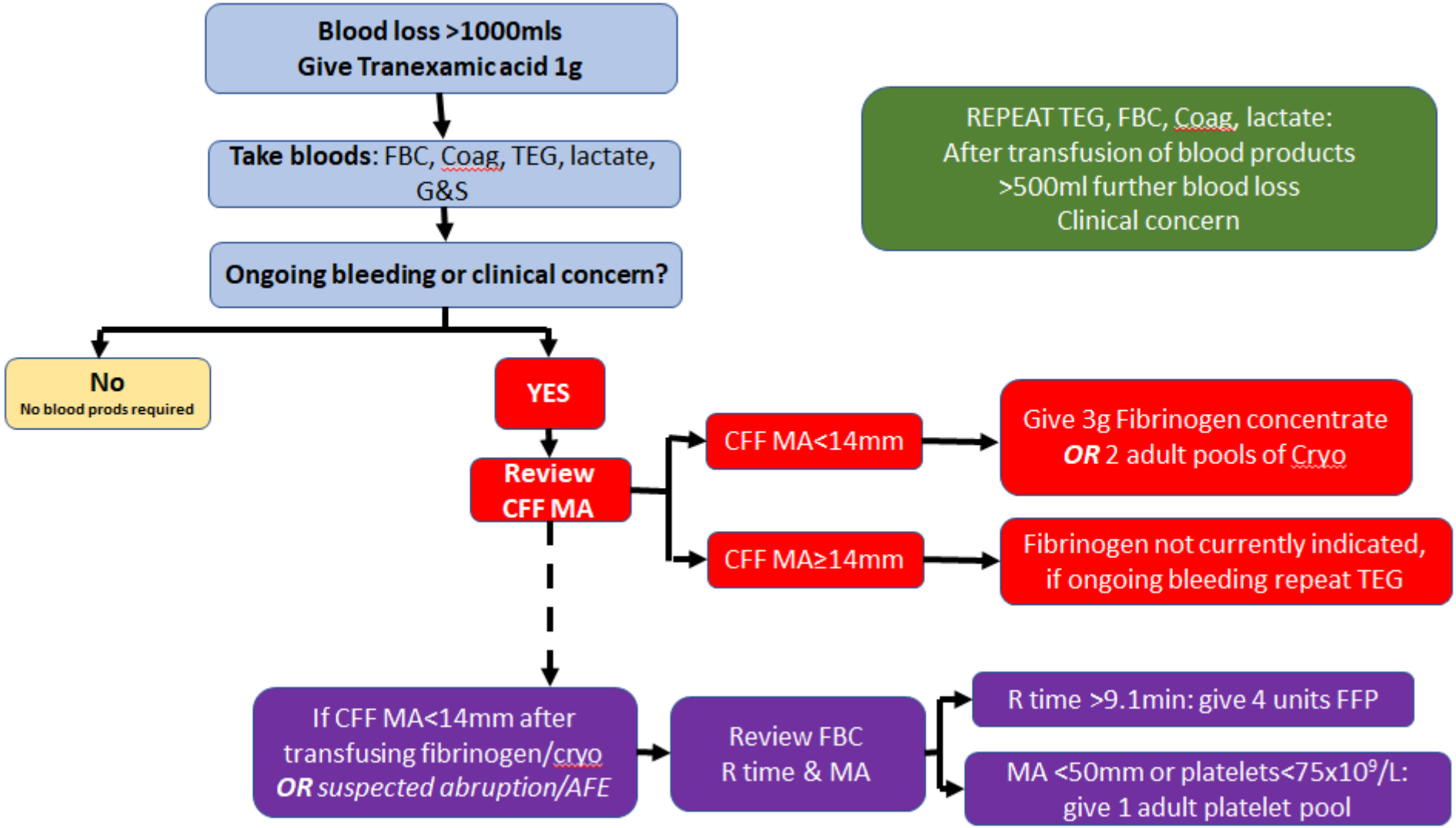
CONTACT AND REVIEW DETAILS			
Guideline Lead (Name and Title) Helena Maybury – Consultant Obstetrician Chris Elton – Consultant Anaesthetist Helen Fakoya – Consultant Midwife			**Executive Lead** Chief Nurse
Details of Changes made during review:			
Date	**Issue Number**	**Reviewed By**	**Description Of Changes (If Any)**
October 2023	**1**	**Maternity guidelines group** **Maternity Governance Committee** **Consultant Obstetricians** **Consultant Anaesthetists** **UHL Women's Quality & Safety Board**	**Combined the** Postpartum Haemorrhage UHL Obstetric Guideline (C38/2011) and Postpartum Haemorrhage in a Midwife Led Unit Low Risk Setting UHL Obstetric Guideline (C24/2011) • **Factors predisposing to PPH – pre labour Hb changed from <85g/l to <95g/l, removed age as a factor.** • **Swabs & pads must be weighed for blood loss estimation at ALL births.** • **When requiring emergency transfer, transfers should be directed to the LRI or nearest available hospital that provides level 3 intensive care facilities.** • **When >1000mls blood loss OR clinical concern of abruption or concealed bleeding OR abnormal vital signs (RR>30, HR≥120bpm, BP≤90/40mmHg, SpO2<95%) perform TEG 6** • **Activate MOH at 1500ml blood loss, reduced from 2000ml** • **Uterine tone added to vital signs to monitor during MOH** • **Fluid therapy changed from 2 litres normal saline to Crystalloid - Up to 3 litres Hartmanns** • **Guidelines for the use of Carboprost (Hemabate®) added** • **Secondary PPH guidance added** • **Early discussion with HDU/ITU Consultant particularly where post-operative ventilation is anticipated (LGH patients will need to be transferred to LRI)** • **NEW PPH Risk assessment and management pro forma**

Appendix 1: Link to UHL massive haemorrhage guideline

Massive Haemorrhage UHL Guideline (LINK)

Please click on the above link for the most up to date UHL Trust massive haemorrhage guideline

Appendix 2: Blood loss >1000ml management pathway



Appendix 3: Bakri Balloon pro forma front sheet

BAKRI INTRAUTERINE BALLOON PACK INSITU

Proforma to be secured to outer cover of case notes and filed in notes once fully completed

ADDRESSOGRAPH		
Date & Time Bakri Balloon inserted: _____ **Volume of Balloon:** _____ml	**Inserted by:** _____	
Vaginal Pack inserted?	**Yes**	**No**
Number of Packs Inserted	_____	
Tail of Vaginal Pack with knot tied visible outside of vagina?	**Yes**	**No**
Date & Time Bakri Balloon removed: _____ _____	**Removed by:** _____	
Date and Time Vaginal Pack removed: _____ _____	**Removed by:** _____	
Number of Vaginal Packs removed:	_____	

Postpartum Haemorrhage Management Checklist

NHS
University Hospitals of Leicester
NHS Trust

Patient's addressograph

Designed to be used in maternity settings.

This is not a comprehensive guideline but a checklist to facilitate an appropriately escalating multidisciplinary team approach to postpartum haemorrhage and as an aid to documentation.

Stage 0

PPH Risk Assessment

Complete for all women on admission (including LSCS)

Most recent Hb = ... Plt = ... Result date / /

PPH Risk Assessment	*Tick if applicable*
Antenatal - "Increased risk" *If any of the following are met:*	
Anaemia or bleeding disorder (Hb <95, plt < 100)	
BMI <18 or >35 or Booking Weight <55Kg *If low weight/BMI - do you need to calculate the circulating blood volume?*	
≥ 5 previous vaginal births	
Previous uterine surgery	
Previous Postpartum Haemorrhage >1L	
Multiple pregnancy or estimated fetal weight >4.5kg	
Abnormal placental implantation	
Polyhydramnios	
Known Abruption or Antepartum Haemorrhage	
Please make an on-going assessment of the following risk factors throughout labour and delivery	
Perinatal - "Increased risk" *If any of the following are met:*	
Suspicion of chorioamnionitis / Sepsis	
Labour augmented with oxytocin	
Prolonged labour >12 hours	
Instrumental delivery	
Retained products of conception	

Plan to measure & record all blood loss

(For pool deliveries estimation may be required)

Act

If the woman is at increased risk, is:

She suitable for electronic cross match or does she need 2 unit cross match? Yes / No

IV access required? (at least 16 Gauge) Yes / No

Treat

Planned an active 3rd stage management? Yes / No

Completed by: ..... *(Please print)*

Stage 1

>500ml ongoing blood loss

SVD & Instrumental deliveries

Get Help	Time	Initial
Notify midwife in charge		
Name: ..... Time arrived:		
Request HCA to assist with measurement		

Other staff present	Designation	*Time arrived*	Initial

Act	Performed by	Time	Initial
Measure Blood Loss *(cumulative measurement)*			
Record observations on MEOWS *every 10 min*			
IV access *at least 16 Gauge*			

What is the cause of bleeding? *Tick cause(s)*

☐ Tone ☐ Trauma ☐ Tissue ☐ Thrombin

Treat	Performed by	Time	Initial
Uterine massage			
Give uterotonics *(record on over page & prescribe)*			
Inspect genital tract			
Empty bladder			
Check placenta & membranes			
Bimanual compression			

Has bleeding stopped?

Please record MBL here ..... ml

Completed by: ..... *(Please print)*

Date: ..... Time: ..... Location: .....

Used with kind permission of OBS CYMRU

Taylor (1241450)SJ

Stage 2 >1000mL blood loss OR clinical concern (eg. Abruption or concealed bleeding) OR abnormal vital signs RR > 30, HR ≥120, BP ≤90/40mmHg, SpO2<95%

Progress to here from stage 1 if SVD / instrumental delivery. Re-start here after stage 0 if LSCS

Get Help

		Time arrived:
MW in charge	Name:.....	Time:.....
Obstetrician	Name:.....	Time:.....
Anaesthetist	Name:.....	Time:.....
HCA	Name:.....	Time:.....

Other staff: **Time arrived:**

Name:..... Designation..... Time:.....

Name:..... Designation..... Time:.....

Name:..... Designation..... Time:.....

Act	Performed by	Time	Initial
Measure & record cumulative blood loss			
Record observations on MEOWS *every 10 min*			
2nd IV access *(at least 16 Gauge)* & fluid bolus			
Take bloods Point of care tests - TEG6, venous lactate, venous Hb Lab test - FBC, Coag, XMatch, U&E			

Review causes *(Tick all identified)* ☐ Tone ☐ Trauma ☐ Tissue ☐ Thrombin

Treat	Performed by	Time	Initial
Review uterotonics *(record on page 3)*			
Give tranexamic acid *(1g IV, if no CI's)*			
Bimanual compresssion			
Consider omeprazole			

Thrombin	Performed by	Time	Initial
Empty bladder			
Foley catheter inserted			
Inspect genital tract			
Check placenta & membranes			

If bleeding stopped ensure PPH post-event checklist completed & Management plan written in notes

Completed by:..... *(Please print)* Date:..... Time:..... Location:.....

If bleeding ongoing transfer patient to theatre

Stage 3 >1500mL blood loss OR ongoing clinical concern

Act	Performed by	Time	Initial
Communicate current measured blood loss to team			
Activate MOH protocol			
Inform Obstetric and Anaesthetic consultants			
Order blood and coagulation products as per MOH and TEG6 protocol - *Do you need to discuss the case with a haematologist?*			

Review causes *(Tick all identified)* ☐ Tone ☐ Trauma ☐ Tissue ☐ Thrombin

Treat	Performed by	Time	Initial
Review uterotonics *(Record on page 3)*			
Consider repeat tranexamic acid (30 mins after 1st) if bleeding ongoing *(1g IV, if no CI's)*			
Consider advanced surgical techniques *(Document on page 4)*			

Additional staff present: **Time arrived:**

Name:..... Designation..... Time:.....

Name:..... Designation..... Time:.....

Name:..... Designation..... Time:.....

Name:..... Designation..... Time:.....

If bleeding stopped ensure PPH post-event checklist completed & Management plan written in notes

Completed by:..... *(Please print)* Date:..... Time:..... Location:.....

Record of Uterotonics used

Please record all uterotonics used here and prescribe on medication or anaesthetic chart

Drug	Dose *(please circle route)*	Time
Syntometrine (caution in HTN/PET)	500 microg/5 units IM	
2nd Syntometrine if no IV access	500 microg/5 units IM	
Oxytocin	3-5 units IV bolus	
Oxytocin	40 units over 4hr IV	
Tranexamic acid	1g IV, if no CI's	
Ergometrine (caution in HTN/PET)	125 microg IV repeat at 5 minute intervals up to max 500 mcg	
Carboprost (caution in asthma)	250 microg IM (repeat up to every 15 min) (max total dose of 2000 microg)	

Drug	Dose	Time
Carboprost	250 microg IM	
Carboprost	250 microg IM	
Carboprost	250 microg IM	
Carboprost	250 microg IM	
Carboprost	250 microg IM	
Carboprost	250 microg IM	
Carboprost	250 microg IM	
Misoprostol	600-800 microg PR	

Blood & blood products/IV fluids administered

Product given	Time

Measured cumulative blood loss

Time	Blood Loss (ml)	Running Total (ml)

Total Measured Blood Loss = ... ml

Record of further blood test results

(Please do not duplicate records of blood results recorded in stage 2)

	Further VBG Test Results		Further TEG6 Test Results	
Time taken	Hb	Lactate	CFF MA (Aim ≥ 14mm)	R time (aim <9.1min)

Date / Time	Documentation of concerns, deviations & other information

PPH Post-event checklist

WHO sign-out completed?	☐ Yes	☐ No	☐ NA *(Patient did not require care in theatre)*	
Have all drugs been prescribed and signed for?	☐ Yes	☐ No	☐ NA	
Post-event Re-bleed Risk Assessment				
Oxytocin infusion running or required?	☐ Yes	☐ No	Time expected to finish:	
Vaginal pack insitu?	☐ Yes	☐ No	Planned removal time:	
Bakri Balloon insitu?	☐ Yes	☐ No	Planned removal time:	
Can NSAID be given?	☐ Yes	☐ No	☐ Not yet	
Thromboprophylaxis plan: LMWH	☐ Yes	☐ No	Time of first dose:	
TEDS	☐ Yes	☐ No		
Post-event Monitoring Requirements				
Level of post-event care required *(circle applicable)*	☐ Level 1	☐ Level 2 *(HDU)*	☐ Level 3 *(ICU)*	
Post-op bloods *(FBC/Coag/U&E)* to be taken at	Time:		Plan to transfuse if Hb <	
PV loss monitoring required?	☐ Yes	☐ No	Frequency of monitoring:	
Urine output monitoring required?	☐ Yes	☐ No	Frequency of monitoring:	
MOH stand down	☐ Yes	☐ No	☐ NA	
Any blood/products to return to blood bank?	☐ Yes	☐ No	☐ NA	

If the MOH protocol was activated before stage 3 or not activated at stage 3 then please detail reason(s) why:

Does a Datix form need completing?	☐ Yes	☐ No
If yes record: Datix form number		
Person responsible for completing Datix form		
Has the event been discussed with the patient?	☐ Yes	☐ No
Has **written information** been provided to the patient?	☐ Yes	☐ No
Does a **formal team debrief** need to take place?	☐ Yes	☐ No

Completed by:..... *(Please print)* Date:..... Time:..... Location:.....

Appendix 5: Home Birth checklist

NHS No: .....

S No: .....

M No: .....

Booked Home Birth

EDD:

Booked Hospital:

BMI :

Name:

DOB:

Address:

Tel:

Special directions to property:

Partner/lone parent:

Community Team:

Named Midwife:

GP surgery:

Parity ☐

GROW Pathway ☐

Smoking/CO check ☒

Key conversations ☐

Past Obstetric History

Date	Weeks	Birth type	M/F	Name	Weight	Complications

Booking Bloods	Date taken	Result
FBC		
Blood group & Rh factor		
Antibodies		
Electrophoresis		
HIV		
Hep B		
Syphilis		
MSU		
T21		
T13/18		

28 week Bloods	Date taken	Result
FBC		
Antibodies		
GTT		
Others:		

Consultant apt/Care Plan needed?

Summary: ☐

Anomaly Scan date documented on E3 ☐

20/40 scan date :

28/40 bloods documented on E3 ☐

MATB1 ☐

Flu vaccine ☐

Whooping cough ☐

Equipment Loan

Pool ☐

TENS ☐

Homebirth Discussion Checklist

- Women giving birth at home must be 37 weeks pregnant and reasons why
- If the midwife has any concerns regarding mother or baby she will discuss them and may advise transfer to the hospital
- Most transfers are precautionary, but in some rare circumstances the need to transfer into hospital may delay emergency treatment
- Midwives carry basic life support equipment
- Pain relief options in the home setting
- Birth plan discussed
- NIPE discussed
- Women who are Rhesus negative and require Anti D postnatally will need to have this administered in hospital within 72 hours of birth
- Consent for students to be present and involved in care Y/N
- Relevant contact numbers
- In exceptional circumstances a situation may arise which can affect the delivery of the home birth service e.g. high demand on the service, adverse weather....if this occurs you will be advised to attend one of the birth centres.
- Any episodes of reduced fetal movements in third trimester?
- Completed 36 week risk assessment in hand held notes? ITB completed as required.
- OASI care bundle discussed

The above issues have been fully discussed:

Patients signature: .....Print name .....Date.....

Midwife signature: .....Print name .....Date.....

Appendix 6: Intention to birth at St Mary's Birth Centre

Intention to Birth at St. Mary's Birth Centre
Checklist

NHS
University Hospitals of Leicester
NHS Trust

Addressograph Sticker here (or complete) Name: _____ Address: _____ _____ _____	Telephone Number: ☐☐☐☐☐☐☐☐☐☐☐☐ Date of Birth: ☐☐/☐☐/☐☐☐☐ GP: _____ NHS/M Number: ☐☐☐ ☐☐☐ ☐☐☐☐
Community Team/Named Midwife: _____	EDD: ☐☐/☐☐/☐☐☐☐

Booking Details

36 week risk assessment completed And meets Midwife Led Care criteria: Yes ☐ No ☐	BMI: _____ <35	Hb: _____ g/l (>104g/l)

Umbrella Consultant Unit: LRI ☐ LGH ☐ QMC ☐ NCH ☐ Other: ☐ _____

Discussed: (please tick)

☐	Key findings from Birthplace study in relation to free-standing midwifery unit such as St Mary's Birth Centre (including adverse perinatal outcomes, benefits in labour, risk of intervention in labour, risk of transfer in labour)
☐	Statistics for St Mary's Birth Centre
☐	One to one Midwife Led Care is provided at SMBC, however, there are no medical staff on site and therefore Caesarean sections, epidurals and other procedures are not available
☐	Women birthing at SMBC must be 37-42 weeks to avoid risks associated with prematurity and postmaturity. Induction of labour is advisable at T+12
☐	Pain relief options at SMBC: Entonox, Pethidine, Birthing Pools, TENS machine (if brought into the Centre)
☐	Individual plans for care e.g. Hypnobirthing
☐	If the Midwife caring for you has any concerns regarding mother or baby, for example, meconium in the liquor, bleeding or a previously undiagnosed breech presentation she will discuss this and advise that transfer to the LRI will be required due to the potential need for neonatal intervention.
☐	Most transfers are precautionary but in some rare circumstances the need for transfer may delay emergency treatment. An ambulance is requested at the time the transfer is required and is not routinely on standby outside the Centre
☐	Emergency equipment required for basic life support is present at SMBC
☐	In exceptional circumstances, a situation may arise which affects the capacity of the Birth Centre e.g. high activity, you are advised to ring before attending in labour. You may be redirected to the Birth Centres in the Hospitals
☐	Rhesus Negative women only. Tick if not applicable ☐ Women who are Rhesus negative and require Anti-D postnatally may be required to attend the Birth Centre or Hospital within 72 hours of the birth
☐	Availability of partner overnight stay on the postnatal ward

Have you been an inpatient in a hospital abroad or outside of Leicestershire in the last 12 months? Yes ☐ No ☐

☐	If Yes, 3x rectal swabs to be taken on 3 consecutive days. Negative results required to birth at SMBC

Client given opportunity to ask questions: Yes ☐ No ☐

The above issues have been fully discussed:

Midwife signature:	Print Name:	Date:

Client signature:	Print Name:	Date:

Hospital records reviewed by:

Midwife Signature:	Print Name:	Date:

Outcome:

☐	No contraindications for birth at SMBC recorded in records

☐	Not suitable for birth at SMBC due to the following reason: **(complete below)**

Plan made:

Women contacted to advise of contraindication:

Midwife Signature:	Print Name:	Date: