



Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

**Guideline on the Management of Postpartum Haemorrhage,
HSE Home Birth Service**

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1. Guideline Statement

Postpartum haemorrhage (PPH) is the most common form of major obstetric haemorrhage and this guideline is guided by the clinical practice guideline Prevention and Management of Primary Postpartum Haemorrhage (HSE/IOG 2012). Obstetric haemorrhage emerges as the major cause of severe maternal morbidity in almost all near-miss audits in both developed and developing countries (RCOG, 2009).

2. Purpose

- 2.1. To provide SECMs with the best practice evidence on the prevention and management of postpartum haemorrhage.
- 2.2. To define postpartum haemorrhage.
- 2.3. To outline the background, evidence and research regarding postpartum haemorrhage.

3. Scope

The recommendations in this guideline apply to SECMs caring for women who have a home birth and experience primary postpartum haemorrhage of 500ml or more.

4. Legislation, Codes of Practice, Standards and Guidance

- 4.1 Health Acts, 1947 to 2015 and regulations made thereunder
- 4.2 Nurses and Midwives Act, 2011
- 4.3 The Scope of Nursing and Midwifery Practice Framework (NMBI 2015)
- 4.4 The Code of Professional and Ethical Conduct (NMBI 2014)
- 4.5 Practice Standards for Midwives (NMBI 2015)
- 4.6 Recording Clinical Practice (NMBI 2015)
- 4.7 Guidance for Nurses and Midwives on Medication Management (ABA 2007)
- 4.8 NICE Clinical Guideline 190 – Intrapartum Care: care of healthy women and their babies during childbirth (NICE 2014)
- 4.9 Evidence Based Guidelines for Midwifery Care in Labour (RCM 2008)
- 4.10 The Irish Maternity Early Warning System (IMEWS) NCEC (DOH 2014)
- 4.11 Communication (Clinical Handover) in Maternity Services NCEC (DOH 2014)
- 4.12 Sepsis Management NCEC (DOH 2014)
- 4.13 HSE Policy and Procedure for Notification of Home Births to the National Ambulance Service (National Ambulance Service, HSE 2015)
- 4.14 Clinical practice guideline, Prevention and Management of Primary Postpartum Haemorrhage (HSE 2012).
- 4.15 Standards and Recommended Practices for Healthcare Records Management (HSE 2011)
- 4.16 National Consent Policy (HSE 2013)
- 4.17 Safety Incident Management Policy (HSE 2014)
- 4.18 National Maternity Strategy 2016-2026 (DOH 2016)

This list is not exhaustive and reference should be made at all times to the guideline for reference sources or the database of legislation, codes of practice, standards and guidance (Clinical Governance Group for the HSE Home Birth Service 2018).

5. Definition & Background

- 5.1 Definition of primary PPH:** the loss of 500 ml or more of blood from the genital tract within 24 hours of the birth of the baby (Mousa & Alfirevic, 2007).
- 5.1.1. The traditional World Health Organization (WHO) definition of primary PPH encompasses all blood losses over 500 ml (WHO 1990). Most mothers can readily cope with a blood loss of this order and an estimated loss of more than 1,000 ml has been suggested as an appropriate cut-off point for definition of major PPH that should prompt the initiation of a protocol of emergency measures (Drife 1997).
- 5.1.2. Multiple definitions of PPH exist:
- Postpartum haemorrhage ≥ 500 ml**
 - Minor PPH 500-1,000 ml**
 - Major PPH $\geq 1,000$ ml (Moderate up to 2,000 ml; Severe above 2,000 mls).**
 - Postpartum blood loss causing haemodynamic compromise
 - 10% fall in haematocrit from antenatal levels
 - Primary postpartum haemorrhage** occurs in the first 24 hours following delivery
 - Secondary postpartum haemorrhage** occurs 24 hours to six weeks following delivery.
- 5.2 Background:**
- 5.2.1. Skin-to-skin and maternal/newborn interactions foster peak oxytocin activity, helping to promote stronger uterine contractions, likely reducing PPH risk (Buckley 2005).
- 5.2.2. Women with hypertensive disorders of pregnancy, antenatal anaemia or low body mass may become compromised with relatively low volume blood loss due to low initial circulating blood volume or red blood cells, and are therefore ineligible for the HSE Home Birth Service.
- 5.2.3. Women with pre-existing bleeding disorders or those treated with low molecular weight heparin (tinzaparin=heparin) are at increased risk of PPH and are ineligible for HSE Home Birth Services.
- 5.2.4. Management of women refusing blood products (e.g. Jehovah's Witnesses) should be referred antenatally for individual assessment with consultant obstetrician.
- 5.2.5. Postpartum haemorrhage is the most common cause of major obstetric haemorrhage; with an incidence of 5-15% per 1,000 births it is a significant contributor to maternal morbidity and mortality worldwide. Even in developed countries, the majority of maternal deaths due to haemorrhage are considered preventable (with substandard care identified in 58% of haemorrhagic deaths in the last triennial, reports Saving Mothers' Lives 2003-2005).

- 5.2.6. The incidence of PPH may be underestimated by up to 50% because of the clinical difficulty in accurately estimating blood loss: **As the volume of blood loss increases, visual estimates decrease in accuracy and consistently underestimate the true volume of haemorrhage** (Bose & Regan 2006).
- 5.2.7. The classic signs of hypovolaemia are not universal and for this reason some patients may not manifest a tachycardia despite significant bleeding.

5.3 Consequences include:

- 5.3.1. Hypovolemic shock, hypotension, organ failure (particularly renal failure)
- 5.3.2. Coagulopathy
- 5.3.3. Anaemia
- 5.3.4. Blood transfusion/blood product exposure
- 5.3.5. Additional surgical procedures
- 5.3.6. Hysterectomy (subsequently sterility for severe PPH)
- 5.3.7. Death
- 5.3.8. Prolonged hospital stay
- 5.3.9. Delayed/failed breastfeeding (secondary to pituitary effects)
- 5.3.10. Sheehan's syndrome

5.4 Risk factors and specific causes of PPH (Al-Zirqi et al, 2008)

- 5.4.1 Two thirds of cases of PPH cannot be accurately predicted
- 5.4.2 There are a number of specific risk factors, which include:

Antenatal Risk Factors	Intra-partum Risk Factors
Proven placenta abruption	Pre-eclampsia/eclampsia
Polyhydramnios	Prolonged first/second stage of labour
Multiple pregnancy	Maternal pyrexia in labour
Pre-eclampsia/hypertension	Inefficient uterine action
Obesity (BMI>35)	Medio-lateral episotomy
Macrosomia>4kgs	Retained placenta
Age>40	Instrumental delivery
Anaemia<9g/dl	Induction of labour
Previous PPH	Delivery by caesarean section

- 5.4.3 Antenatal detection of anaemia and optimisation of the haemoglobin concentration are important prior to the onset of labour.

5.5 The 4 Ts describe the causes of PPH: Tone, Trauma, Tissue, Thrombin

Cause	Etiology	Risk Factors
TONE (70%) Abnormalities of uterine contraction	Atonic uterus Overdistended uterus (twins etc.)	Prolonged third stage Polyhydramnios Multiple pregnancy High parity Previous PPH General anaesthesia
TRAUMA (20%) Genital tract trauma	Cervical, vaginal, perineal lacerations, pelvic haematomas, uterine inversion, ruptured uterus.	Induced labour Augmented labour Placenta accreta Labour dystocia Instrumental labour

TISSUE (10%) Retained products of conception	Retained tissue Abnormal placentation	Incomplete placenta at delivery Placenta praevia/accreta Previous CS Previous uterine surgery Abnormal placenta on US High parity
THROMBIN (1%) Abnormalities coagulation	Coagulopathies Preeclampsia Dead foetus in utero Severe infection Therapeutic anti-coagulation	Prolonged atonic uterus Elevated blood pressure HELLP syndrome Foetal death Antepartum haemorrhage

5.6 Clinical Signs of PPH

- 5.6.1 Tachypnoea/tachycardia/pulse blood pressure changes
- 5.6.2 Dizziness
- 5.6.3 Systolic blood pressure falls
- 5.6.4 Restlessness/agitation
- 5.6.5 Oliguria (organ hypoperfusion)
- 5.6.6 Loss of consciousness

6. Roles and Responsibilities

6.1. The Director of Primary Care shall ensure:

- 6.1.1 The provision of appropriate systems and structures to support the SECM to provide emergency midwifery care for women and their families availing of the HSE Home Birth Service.

6.2. The Chief Officer or delegate shall ensure:

- 6.2.1 The implementation of systems and structures for the SECM to provide emergency midwifery care for women and their families availing of the HSE Home Birth Service.
- 6.2.2 That the SECM and DMO report any adverse incidents to the National Incident Management System (NIMS) as per HSE Safety Incident Management Policy 2014.

6.3. The Designated Midwifery Officer (DMO) shall:

- 6.3.1 Ensure that the appropriate systems and structures are in place to implement this guideline.
- 6.3.2 Ensure that the SECMs have submitted up-to-date certificate in PROMPT or obstetric emergency skills training.
- 6.3.3 Ensure that the SECM receives this guideline and monitors adherence to it.
- 6.3.4 Ensure that completed incident forms are received from the SECM and forwarded to the National Incident Management System (NIMS) as per HSE Safety Incident Management Policy 2014.

6.4. The Self-employed Community Midwife (SECM) shall ensure:

- 6.4.1 Competence in managing obstetric emergencies and have up-to-date PROMPT or obstetric emergency skills training.
- 6.4.2 That they have all the equipment required for obstetric emergencies.
- 6.4.3 That the woman and her partner are prepared, during pregnancy, for the possibility of the transfer of maternity care before, during or after the home birth.
- 6.4.4 That he/she has a second SECM in attendance at the birth.
- 6.4.5 That he/she reviews the plan of care if risk factors are present antenatally or intranatally.
- 6.4.6 That he/she liaises with Ambulance Control as per the National Policy for Communication with National Ambulance Service (HSE 2015) and Transfer Policy, HSE Home Birth Service (HSE 2016).
- 6.4.7 That he/she reports any adverse incidents via the DMO to the National Incident Management System (NIMS) as per HSE Safety Incident Management Policy 2014.
- 6.4.8 That he/she signs to have read, understood and comply with this practice guideline.

7. Procedure

7.1. In caring for women in labour the threat of PPH can be reduced by:

- 7.1.1. Women at known risk of PPH should deliver in hospital.
- 7.1.2. Active management of the third stage of labour for women who are at threat of PPH has been shown to reduce the incidence of PPH (Begley et al 2015).
- 7.1.3. Active management of labour has three components
 - a. Prophylactic uterotonic administration: oxytocin (syntocinon) 10 units IM or ergometrine maleate/oxytocin (Syntometrine) 500mcg/5 units IM. The timing of administration of prophylactic uterotonic drugs is immediately following delivery of the baby.
 - b. Early cord clamping following delivery of the baby.
 - c. Controlled cord traction for the delivery of the placenta.
- 7.1.4 Attention to bladder care during labour

7.2. Immediate Management of PPH

- 7.2.1. Once PPH has been identified, management involves four components, all of which must be undertaken SIMULTANEOUSLY: Communication, Resuscitation, Monitoring and Investigation, Arresting the bleeding.
- 7.2.2. Where primary PPH occurs in a woman delivering at home, the role of the professionals on site is to institute 'first aid' measures while arranging ambulance transport to a consultant-led maternity unit. Call 999.
- 7.2.3. Health professionals should be aware that minor PPH can easily progress to major PPH and is sometimes unrecognised.

- 7.2.4. **Remember**, blood loss may be concealed – the woman may have significant blood loss into the uterus or abdomen that cannot be estimated by the blood you can see in the bed/pads/incontinent sheets etc.

7.3. Initial measures to stop bleeding

- 7.3.1. Call for help: dial 999 and summon ambulance immediately.
- 7.3.2. Massage the uterus to rub-up a contraction and expel blood clots.
- 7.3.3. Repeat syntometrine 1amp IM or give ergometrine 500mcg slowly IV.
- 7.3.4. Ensure an empty bladder by inserting an indwelling urinary catheter, followed by strict assessment of hourly urinary output.
- 7.3.5. Examine the patient to exclude causes of bleeding other than uterine atony such as placental tissue, vaginal and cervical lacerations, uterine rupture and broad ligament haematoma.
- 7.3.6. Recheck placenta for completeness if delivered. If not, proceed to transfer to the maternity unit/hospital for manual removal of the placenta.
- 7.3.7. Do bimanual compression if the uterus is atonic.

7.4. Resuscitation

- 7.4.1. Cannulate if not already receiving IV fluids; provide access with two large-gauge cannulae.
- 7.4.2. Commence syntocinon 40 IU in 500mls NaCl solution at a rate of 125mls/hour via flow controlled giving set/pump over four hours.
- 7.4.3. If possible, take blood samples for full blood count (FBC), coagulation screen, urea and electrolytes (U&E) and cross match for 4-6 units of blood (packed cells) urgently.
- 7.4.4. Rapid fluid resuscitation by means of Hartmann's solution and/or Gelofusine. Until blood is available, infuse up to 3.5 litres of warmed crystalloid Hartmann's solution (2 litres) and/or colloid (1-2 litres) as rapidly as required.
- 7.4.5. The best equipment available should be used to achieve RAPID WARMED infusion of fluids (if possible).
- 7.4.6. Provide oxygen therapy at 15 litres per minute regardless of maternal oxygen concentration.
- 7.4.7. Blood transfusion once in hospital; consider O-Neg blood if life-threatening bleeding pending crossmatch.

7.5. Monitoring and Assessing

- 7.5.1. Airway, Breathing, Circulation (ABC) approach identifies the most serious problems in the first moments of assessment.
- 7.5.2. Vital signs to include blood pressure, pulse, respiratory rate, temperature and saturated oxygen levels taken every 15 minutes and documented on IMEWS chart.
- 7.5.3. Blood loss – accurate assessment (use blood loss aid in appendix I), arrange to bag blood-stained incontinent sheets and pads and bring to hospital for weighing.
- 7.5.4. Urinary output – hourly monitoring.
- 7.5.5. Coagulation status.

7.6. Pharmacological and Fluid Therapy in PPH

- 7.6.1. Uterotonics in the treatment of PPH:
 - a. If Syntometrine 500mcg IM is normally given as part of the active management of the third stage of labour, where there are no IV lines repeat Syntometrine 500mcg IM.
 - b. Ergometrine 500mcg IM can also be given, or if IV access is available it can be given slowly IV.
 - c. For continued bleeding anoxytocin (Syntocinon) IV infusion of 40 units over four hours can be given in 500 ml NaCl solution at a rate of 125 ml/hour (HSE 2012).
 - d. Once in an obstetric-led unit other pharmacology like carboprost (Haemabate) and misoprostil (Cytotec) can be used.

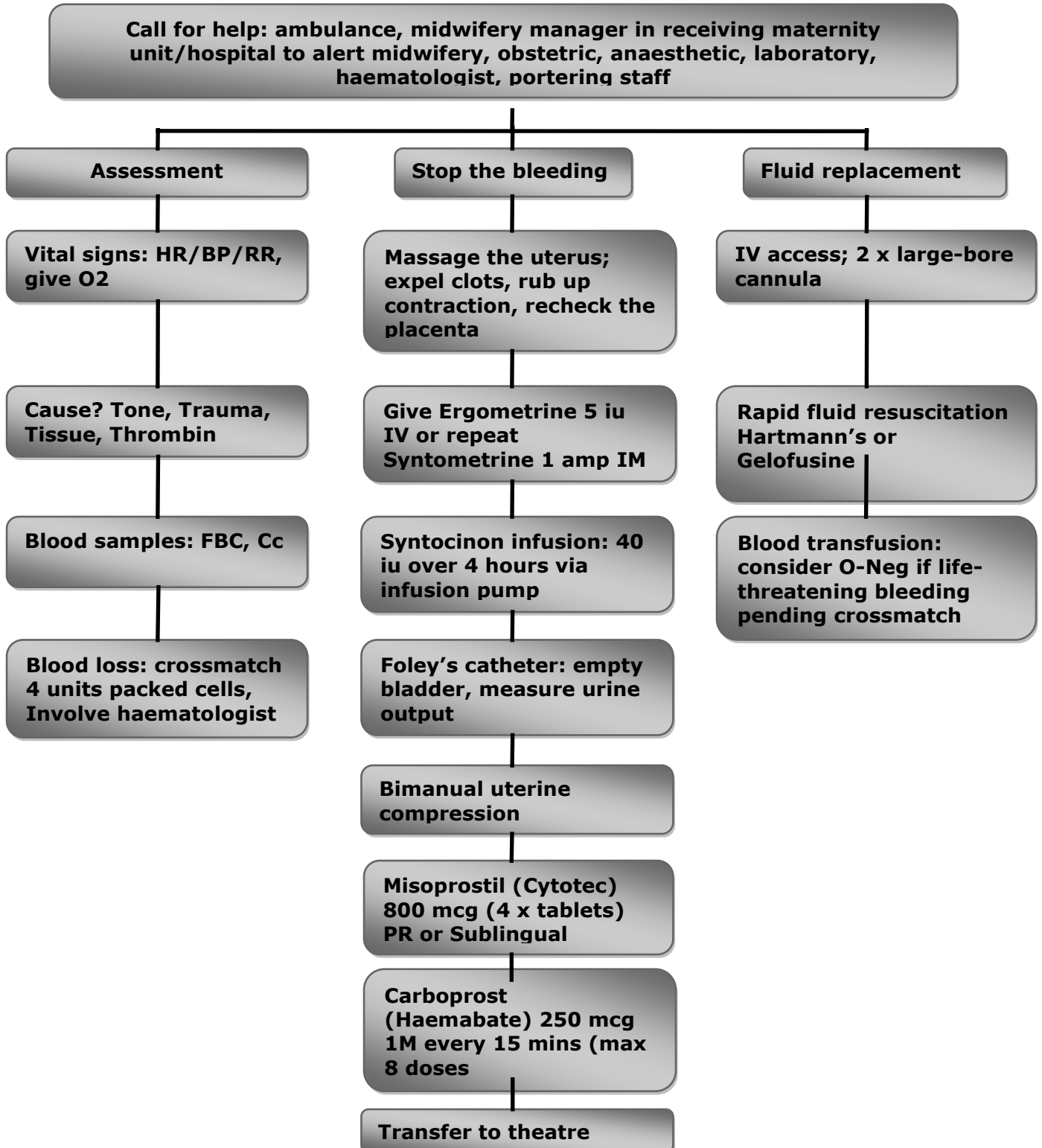
- 7.6.2. Fluid therapy and blood transfusion:
 - a. Crystalloid: up to 2 litres of Hartmann's solution.
 - b. Colloid: up to 2 litres of Gelofusine until arrival at obstetric-led unit.
 - c. Once in an obstetric-led unit blood cross matched preferred; if crossmatch is not ready give O-negative blood, fresh frozen plasma 4 units for every 4-6 units of red cells transfused, platelet concentrate if platelet count is <50 on FBC.
 - d. Accurate documentation of fluid resuscitation on clinical handover will help to determine the need for additional blood/blood products.

7.7. Good communication between the multi-disciplinary team is essential for success.

- 7.7.1. The SECM and second SECM shall work as a team until further help arrives at the home.
- 7.7.2. Call 999 and communicate with Ambulance Control noting the urgency of the situation (see HSE Ambulance Control Notification of Home Births Policy HSE 2015).
- 7.7.3. Communicate with ambulance crew on arrival to home using ISBAR communication tool.
- 7.7.4. Communicate with the maternity unit/hospital staff using ISBAR communication tool to ensure that the necessary staff are available on arrival (see Transfer Policy HSE Home Birth Service Appendix 1).
- 7.7.5. Provide woman and birth partner with clear explanation and updates of situation as it occurs.
- 7.7.6. Provide detailed documentation of all midwifery care given to the woman, both before and after the diagnosis of PPH.
- 7.7.7. Record all documentation in the healthcare record and complete the ISBAR Clinical Handover Tool.
- 7.7.8. Provide clinical handover to receiving clinician in the maternity unit/hospital using ISBAR tool (Communication in Maternity Services (Clinical Handover) NCEC (DOH 2014)).

- 7.7.9. Once stabilised, mother and partner should receive a clear explanation of the cause and management of the haemorrhage.
- 7.7.10. Clinical incident form should be completed and forwarded to the DMO.

**RESUSCITATION IS A TEAM EFFORT SO CALL FOR HELP
EARLYREMEMBER THE ABC APPROACH TO RESUSCITATION.**



7.8. Management of Secondary PPH

- 7.8.1. The SECM should call an ambulance and transfer the woman to the nearest maternity hospital/unit without delay as secondary PPH is often associated with infection or retained products.

8. Monitoring and Audit

- 8.1. Monitoring of compliance with this guideline shall be undertaken by the DMO.
- 8.2. Audit of compliance with this guideline shall be undertaken by HSE professionals.

9. Training

The SECM shall ensure that she/he has sourced appropriate education and training to support the implementation of this guideline.

10. Implementation Plan

The Clinical Governance Group for the HSE Home Birth Service developed this document, which has been approved for implementation by the National Implementation Steering Group for the HSE Home Birth Service. This document will be piloted for a year from the approval date. It will be disseminated by the Designated Midwifery Officers to relevant healthcare personnel and to all Self-Employed Community Midwives who provide home birth services on behalf of the HSE.

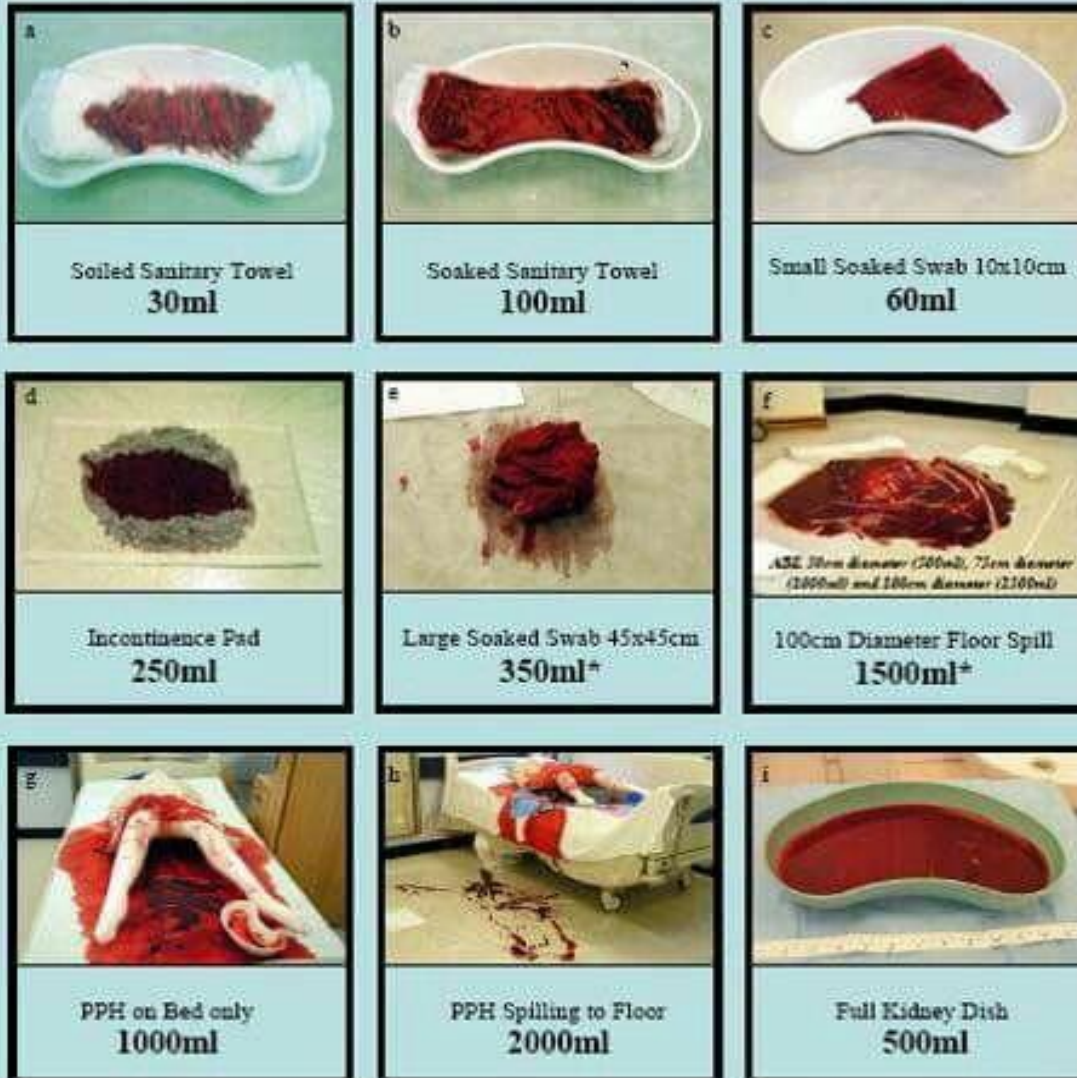
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12. Appendix I

A Pictorial Reference Guide to Aid Visual Estimation of Blood Loss at Obstetric Haemorrhage: Accurate Visual Assessment is Associated with Fewer Blood Transfusions

Dr Patrick Bose, Dr Fiona Regan, Miss Sara-Paterson Brown



*Multidisciplinary observations of estimated blood loss revealed that scenarios (e-f) are grossly underestimated (> 30%)

For Further Information please contact Miss Sara Paterson-Brown
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13. Membership of Working Group

The Clinical Governance Group (CGG) for the HSE Home Birth Service commissioned a Sub-Group (members below) to develop this document which was then reviewed by the Quality Assurance Sub Group (members below). A final draft was produced by the CGG members and recommended for approval to the National Implementation Steering Group for Home Births (NISG). Following a 12 month pilot of this document, the NISG have approved its revision and implementation.

Sub-Group Members:

Ms Janet Murphy Advanced Midwife Practitioner WRH (Sub-group chair)
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Quality Assurance Sub-Group:

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