National Women & Infants Health Programme

QUICK SUMMARY DOCUMENT

Prevention and Management of Primary Postpartum Haemorrhage

This Quick Summary Document (QSD) is a resource for all clinicians working in healthcare in Ireland who are involved in the care of women with Primary Postpartum Haemorrhage.

Following a comprehensive literature review a number of evidence-based recommendations for prevention and management of Primary Postpartum Haemorrhage were agreed upon.

Key Recommendations

PREPAREDNESS

1. Women who are at higher Post Partum Haemorrhage (PPH) risk should be identified and actively managed at each care opportunity. This should include screening for and management of antenatal anaemia and recognised PPH risk factors.
2. Each maternity unit should have a policy in place for identification and management of women with red cell antibodies (where specific additional blood transfusion matching is required).
3. Women who do not wish to receive blood products should be identified at their booking visit. There should be a detailed discussion and documentation of acceptable and unacceptable treatments. Advance Decision to Refuse Specified Medical Treatment should be completed and kept in the maternity chart and updated during pregnancy.
4. Women with inherited bleeding disorders should be identified at booking and referred for planning of pregnancy, intrapartum and postpartum care by experienced fetomaternal specialists, haematologists and anaesthetists.
5. Women should have a FBC at booking and at 28 weeks' gestation to screen for anaemia with the aim of treating and optimising haemoglobin before birth. Keeping in line with UK recommendations repeat blood group at 28 weeks to further screen for red cell alloantibodies should be considered.
6. Placental site should be determined at routine fetal anatomy scanning, particularly if there is a previous Caesarean Section.
7. If placenta accreta spectrum has been diagnosed, planned delivery before term in a unit with an experienced skilled multidisciplinary team of specialists and resources, is recommended.
8. Risk factor assessment for PPH should continue intrapartum and should be clearly communicated during handover of clinical care.
9. Women with retained placenta, or who require intrapartum Caesarean Section (especially in the second stage of labour) require close surveillance for PPH.
10. It is important to remain vigilant for excessive blood loss at all births because many women who suffer a PPH do so without identifiable risk factors.
11. All obstetric units should maintain a supply of O Rh D negative, Kell negative blood for emergency use.
12. Each maternity unit should develop local policies and protocols to include standards of documentation, defined roles and responsibilities, blood component and pharmaceutical location/availability, reporting and review processes.
13. Each maternity unit should identify and document the turn around times (TAT) for laboratory tests relevant to management of MOH. Near patient testing (blood gas analysis and coagulation testing), if used, should be compliant with national guidelines/standards.

14. Local hospital blood group serology testing and blood order schedules for delivery method should be developed and periodically reviewed for appropriateness. Sample acceptance and component release policies should be agreed.
15. Local simulated multidisciplinary team (including laboratory staff) drills should be used to promote learning. Each maternity unit should undertake training of all staff engaged in the management/support of PPH/MOH in compliance with their policies and local procedures. Training should include the use of multidisciplinary 'drills' on a specified periodic basis and eLearning if available.
16. Appropriately trained colleagues should provide simulation training for life threatening MOH to anaesthesiologists, obstetricians, midwives, laboratory and portering staff.
17. We recommend that a national MOH poster be adopted and personalised by each unit delivering maternity care. This poster should be prominently displayed in each labour ward/theatre.

PREVENTION

18. Delayed cord clamping is recommended for neonatal benefit. The cord should be clamped immediately if there is active maternal bleeding or a need for neonatal resuscitation.
19. Prophylactic uterotonics should be administered to all women immediately following birth to prevent PPH.
20. Administration of oxytocin at a dose of 10 IU IM or 5 IU by slow IV, is recommended following a vaginal birth.
21. While oxytocin can be administered at lower doses at elective CS and followed by low dose infusion, higher initial doses and infusions may be required for intrapartum CS especially when an oxytocin infusion has been used in labour.
22. Prophylactic oxytocin (5IU) in combination with ergometrine (500µg) [Syntometrine] IM may reduce blood loss more than oxytocin alone and may be considered as a first line prophylactic uterotonic in women at high PPH risk. We do not recommend it as a first line uterotonic in women at low risk because of a five-fold higher risk of nausea, vomiting and hypertension compared to use of oxytocin alone.
23. Carbetocin is non-inferior to oxytocin in preventing PPH following vaginal birth and elective CS. We do not recommend it as an alternative first line uterotonic because of unproven cost benefit.
24. Women requesting physiological management of the third stage of labour should be informed of the risk and benefits, especially if they have PPH risk factors. They should be supported in their choice, once fully informed, but advised that a uterotonic should be administered if excessive bleeding occurs or if the placenta has not separated after 30 minutes.
25. Preparations should be made to transfer the woman to theatre for manual removal of placenta (MROP) 30 to 60 minutes after birth and sooner if there is active bleeding.
26. We suggest that prophylactic tranexamic acid administration may be considered in women who are at high PPH risk (including combinations of risk factors).

RECOGNITION

27. Gravimetric or calibrated methods of blood loss measurement are recommended at CS, operative vaginal birth and after spontaneous vaginal birth if visual estimation of blood loss is >500 ml.
28. Cumulative measured blood loss during PPH should be recorded and communicated to the team.
29. Care providers should be vigilant for symptoms and signs of hypovolemia as these may not always correlate with blood loss and should consider the possibility of underestimated or concealed blood loss.

MANAGEMENT: STOP THE BLEEDING

30. A staged approach to PPH response is recommended with escalation of care depending on blood loss and clinical concerns.
31. We recommend that each Maternity unit implement the NPEC/NWIHP-documented pathway checklist for PPH management with local agreed modifications.

32. Standard components of initial uterine atony management should include uterine massage, insertion of an indwelling catheter and a check of the completeness of the placenta and membranes.
33. Oxytocin is recommended as the first-line PPH treatment, either as a slow IV bolus or infusion. It is preferable to administer oxytocin using a controlled infusion device.
34. We suggest that ergometrine is administered as the second line uterotonic for PPH treatment (in the absence of contra-indications) followed by either misoprostol or carboprost depending on the clinical circumstances.
35. Each obstetric unit should have a clear local policy on uterotonic use in PPH treatment, providing suggested drug sequences and dosing recommendations that may be individualised.
36. Tranexamic acid administration is recommended early during PPH treatment.
37. The most appropriate surgical intervention should be determined by the cause of PPH, the haemodynamic stability of the woman, the available surgical expertise and access to supportive services (such as imaging and interventional radiology).
38. Hysterectomy should be considered when interventions to arrest bleeding and/or resuscitation measures to compensate for bleeding are not effective. Efforts should be made to obtain a second opinion before proceeding to hysterectomy if feasible in a timely manner.

MANAGEMENT: RESUSCITATE

39. Restrictive crystalloid administration < 3.5L is suggested during severe ongoing haemorrhage.
40. The use of blood components should be guided by the clinical situation and should not be delayed while awaiting laboratory results. Access emergency/patient specific red cell support immediately and refer to the national MOH poster.
41. Platelet components should be ordered at a platelet count of 100 x 109/l. Platelet transfusion should be given when the platelet count falls <75 x 109/l, in order to maintain a count >50 x 109/l. Early platelet transfusion should be considered for abruption and abnormal placentation.
42. A plasma fibrinogen level of > 2 g/l should be maintained by administration of fibrinogen concentrate.
43. Empiric early fibrinogen replacement may be considered if the fibrinogen result (or Viscoelastic haemostatic assay (VHA) equivalent) is not rapidly available, especially in the setting of placental abruption/praevia or amniotic fluid embolism.
44. VHA may be considered in the management of PPH if local resources and governance structures permit.
45. Cell salvage may have a role in the management of PPH in selected cases, if local resources and governance structures permit.
46. There is no evidence favouring either general or regional anaesthesia in postpartum haemorrhage management in the operating room.

MANAGEMENT: COMMUNICATE – CODE RED OBSTETRICS

47. The major obstetric haemorrhage (MOH) protocol (articulated as CODE RED OBSTETRICS) should be activated for uncontrolled bleeding >1500ml blood loss or if a clinical concern warrants it.
48. Each maternity unit should adopt the nationally agreed term 'life threatening haemorrhage: code red – obstetrics'.
49. Clear communication pathways are recommended to alert all relevant team members and a designated person should coordinate further management. The team should use the ISBAR (Identify – Situation-Background-Assessment-Recommendation) technique as a simple way to plan and structure communication.
50. The woman and her partner should be informed and supported by appropriate staff throughout the event.
51. A scribe should be assigned to document staff present and timing of interventions.
52. The emergency should be stood down when bleeding is controlled or as appropriate with clear communication to all team members including laboratory staff.

MANAGEMENT: POST EVENT CARE

53. A restrictive transfusion policy (Hb < 7 g/dl) may be considered in stable women without severe symptoms following a postpartum haemorrhage.

54. All women should undergo a formal VTE and bleeding risk assessment after haemostasis has been secured (and repeated when the clinical situation changes). Pharmacological and/or mechanical thromboprophylaxis should be considered as appropriate. Multidisciplinary discussion may be required to determine the optimal timing of initiation of pharmacological thromboprophylaxis. Women should be informed of the signs and symptoms of a VTE, and that such an event may occur post-discharge. Women should be provided with a HSE VTE alert card before leaving hospital.

55. There should be debriefing of the staff, the woman, and her partner as soon as possible after the event. A further debrief should be offered to the woman and her partner following hospital discharge, usually around six weeks following birth.

56. Documentation of events, and completion of component traceability should be carried out if not completed contemporaneously.

57. All incidents of PPH ≥ 500ml for vaginal and ≥ 1000ml Caesarean Section should be reported through the National Incident Management System (NIMS) in line with the HSE Incident Management framework (2020). All MOH (Estimated blood loss ≥ 2500ml and/or transfused 5 or more units of blood) cases should be reported to the National Perinatal Epidemiology Centre, Severe Maternal Morbidity audit.

58. Serious adverse events and serious adverse reactions (SAE/SAR) associated with transfusion/life threatening haemorrhage should be reported to the National Haemovigilance Office (NHO).

AUDIT, EVALUATE, ASSIMILATE

59. Each maternity unit should have processes in place for auditing clinical practice and agreed data set, providing feedback to team members.

60. Cases of MOH should be reviewed at local serious incident management team (SIMT) meetings (or similar risk management team meetings), hospital transfusion committee (HTC) and overarching transfusion committees (OTCs) to evaluate the effectiveness of care, treatment and services provided. Systems learning should be identified, and change effected through communication and education.

Algorithm

Staged approach to prevention and management of PPH

All women Antenatal/ Intrapartum	>500ml ongoing blood loss. SVD & Instrumental deliveries	>1000mL blood loss OR clinical concern	>1500mL blood loss OR clinical concern	Post event checks
Check that an antenatal risk assessment for PPH was completed	**GET HELP** Notify Senior Staff	**GET HELP Senior Staff**	**Communicate current measured blood loss to team**	Complete post event checks
Complete and document risk assessment	**ACT** • Record observations BP and HR and interventions • Start blood loss Assessment • IV access - large bore • Bloods can be taken • Inspect genital tract, check placenta and membranes • Assign scribe (if available)	**ACT** • Continue to measure and record cumulative blood loss • 2ndIV access • Give IV fluids • Take bloods including FBC, coagulation studies with fibrinogen level, point of care blood gas • Inform transfusion lab and check availability of compatible red cell components/take sample as required	**ACT** Activate MOH/life threatening obstetric haemorrhage protocol	Discuss event with woman and partner
ACT • Consent obtained • Blood: group and ab screen xmatched • Ensure IV access	**TREAT** • Uterine massage • Give uterotonics • Empty bladder	**TREAT** • Review uterotonics • Transfuse as appropriate • Give tranexamic acid • Foley catheter inserted • Inspect genital tract • Repair genital tract	What is the cause of the bleeding?	Complete documentation Including management plan
TREAT Active 3rd stage management is considered	What is the cause of the bleeding?	What is the cause of the bleeding?		Discuss event with other staff

ALERT : Consider the possibility of underestimated or concealed blood loss

Please note that the nature of PPH is such that depending on the clinical circumstances, staffing, etc these stages are not prescriptive and some interventions (e.g. blood testing or establishing adequate IV access) may occur at an earlier stage. This algorithm is designed to aid recognition, guide management with the aim of reducing the incidence of progression to LTH/MOH.

Prevention and Management of Postpartum Haemorrhage Checklist*

MRN:

Most recent

Hb

Plt

Date:

STAGE 0: PPH Risk Assessment Complete for all women on admission (including LSCS Labour)			
Check Antenatal Risk Assessment	**TIME:**	**ACT**	
Retained products of conception/Placenta		Woman group & ab screen	Yes | No
Induction of labour/Augmentation of labour		Woman xmatched	Yes | No
Placenta Previa/Accreta/Abruption		IV access required?	Yes | No
Chorioamnionitis		Consent obtained	Yes | No
Labour Delivery (Please make an on going assessment of the following risk factors throughout labour and delivery)		**TREAT**	
Sepsis/Pyrexia in labour		Planned active 3rd stage management?	Yes | No
Prolonged 1st of labour > 12 hours active		**PLAN TO MEASURE AND RECORD ALL BLOOD LOSS**	
Prolonged 2nd stage of labour >4hours		Please make an on going assessment of risk factors throughout labour and delivery	
> 12 hours of Syntocinon			
Operative Vaginal Delivery			
Emergency Caesarean Section			
Baby >4.5kg			

STAGE 1: >500ml ongoing blood loss. SVD & Instrumental deliveries			
GET HELP	**TIME:**	**ACT**	**TIME:**
Notify Midwife/Obstetrician		Check placenta and membranes	
ACT		Inspect genital tract	
Assign scribe (if available)		**TREAT**	
Measure Blood Loss (cumulative measurement)		Uterine Massage	
Record observations HR + BP)		Empty bladder	
IV access – large bore		Give uterotonics	
Blood can be taken		Bimanual uterine compression	
What is the cause of the bleeding? Tone | Trauma | Tissue | Thrombin. (please circle cause/s)			

ALERT : Consider the possibility of underestimated or concealed blood loss

Communicate current measured blood loss to team

STAGE 2: >1000mL blood loss OR clinical concern

e.g. abruption or concealed bleeding OR abnormal vital signs RR>30, HR ≥ 120, BP ≤ 90/40mmHg, SpO2<95%. Progress here from stage 1 if SVD/Instrumental delivery. Restart here after stage 0 if LSCS.

GET HELP	**TIME:**	Hb
MW in charge		Coag
Obstetrician		PT
Anaesthetist		APTT
Other staff		Fibrinogen
ACT	**TIME:**	**TREAT** **TIME:**
Measure and record cumulative blood loss		Review uterotonics
Record observations (HR + BP)		Give tranexamic (1g IV, if no CI's)
2nd IV access and fluids		Transfuse as appropriate
Take bloods		Uterine Compression
Lab tests FBC, Coag, Xmatch, U&E, FIB		Foley catheter inserted
Inform transfusion lab and check availability of compatible RCC take sample as required		Inspect genital tract
		Repair genital tract
		Check placenta and membranes

What is the cause of the bleeding? Tone | Trauma | Tissue | Thrombin. (please circle cause/s)

ALERT : Consider the possibility of underestimated or concealed blood loss

Communicate current measured blood loss to team

STAGE 3: >1500ml blood loss OR clinical concern
IF BLEEDING ONGOING TRANSFER PATIENT TO THEATRE

STATE I am activating the Life Threatening Haemorrhage Protocol, CODE RED OBSTETRICS

ACT	**TIME:**	**TREAT** **TIME:**
Activate the MOH/ life threatening haemorrhage protocol		Review uterotonics
Identify Emergency Coordinator Identify Communication Lead		Consider repeat tranexamic acid
Inform consultant obstetrician and anaesthetist		Consider advanced surgical techniques
Resuscitate		**ONCE BLEEDING STOPPED ENSURE PPH CHECKLIST IS COMPLETED AND MANAGEMENT PLAN WRITTEN IN NOTES**
Order blood components as per the MOH poster		

What is the cause of the bleeding? Tone | Trauma | Tissue | Thrombin. (please circle cause/s)

Adapted with permission from California Maternal Quality Care Collaborative and OBS Cymru

Names of Staff Present

MEASURED CUMULATIVE BLOOD LOSS		
Time	Blood Loss (ml)	Running total

Total Measured Blood Loss: _____ml

BLOOD & BLOOD PRODUCTS TRANSFUSED	TIME

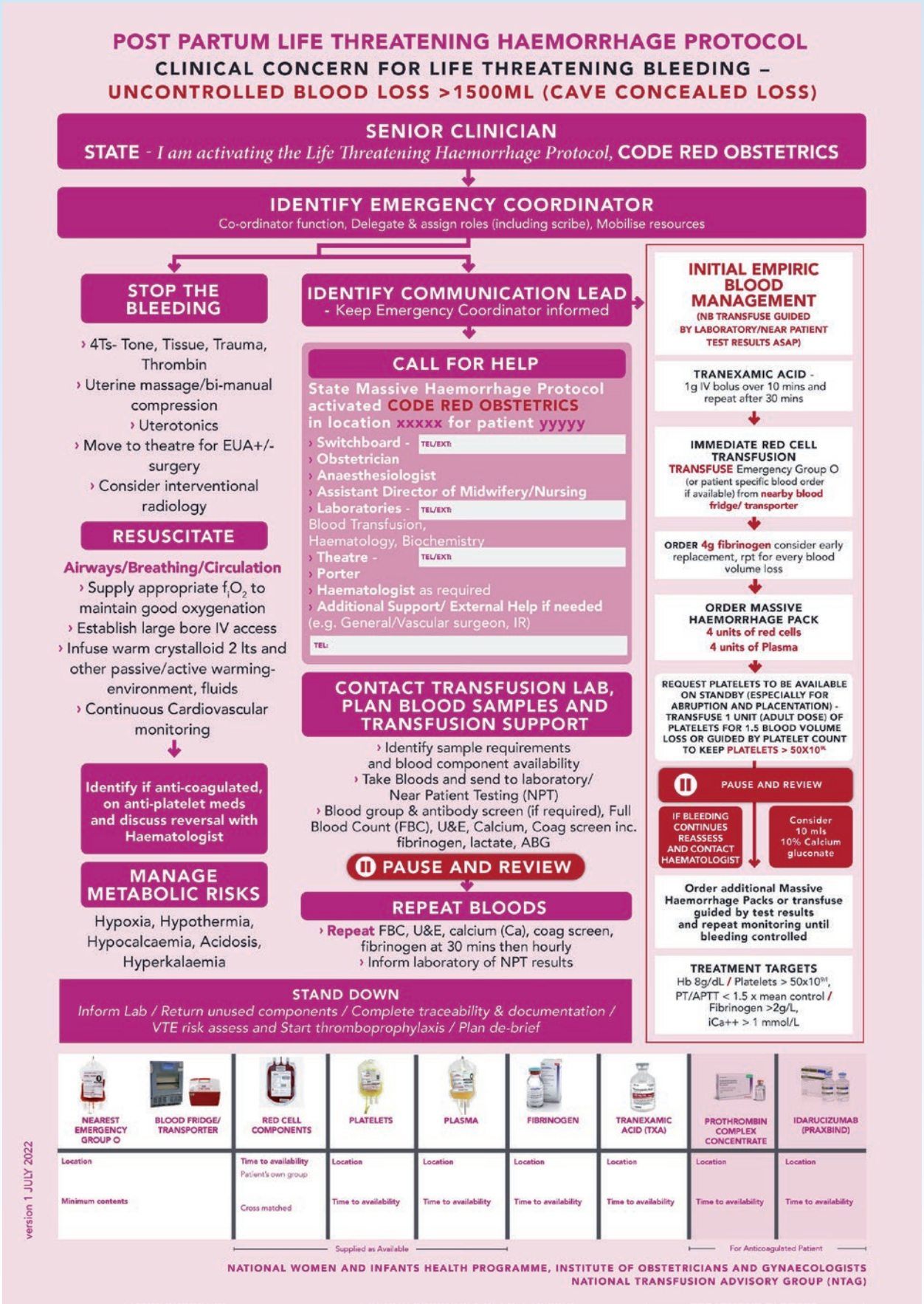
Remember to discuss the event with the woman and her partner

RECORD OF UTEROTONICS USED – TO PREVENT BLEEDING		
Drug	Dose	Time

RECORD OF UTEROTONICS USED – TO TREAT BLEEDING

Notes

Post Partum Life-Threatening Haemorrhage Protocol



Auditable standards

Audit using the key recommendations as indicators should be undertaken to identify where improvements are required and to enable changes as necessary, and to provide evidence of quality improvement initiatives.

Auditable standards for this guideline include:

1. Proportion of women having an antenatal Hb at 28 weeks and appropriate response to antenatal anaemia
2. Proportion of women who have had red cell antibody screen at 28 weeks
3. Proportion of women with previous CS having location of placenta documented
4. Proportion of women having consent to blood transfusion documented
5. Proportion of MOH events compliant with best practice
6. Proportion of women who have had antenatal PPH risk assessment documented
7. Proportion of women who received AMTL
8. Proportion of women receiving VTE risk assessment
9. Proportion of staff training for checklist/algorithm, drills completed
10. Drills completed and staff attending the drill

Recommended reading:

1. HSE Nomenclature for Clinical Audit – https://www.hse.ie/eng/about/who/nqpsd/ncca/nomenclature-a-glossary-of-terms-for-clinical-audit.pdf
2. HSE National Framework for developing Policies, Procedures, Protocols and Guidelines at https://www.hse.ie/eng/about/who/qid/nationalframeworkdevelopingpolicies/
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Authors

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https://www.hse.ie/eng/about/who/acute-hospitals-division/woman-infants/clinical-guidelines/

https://www.rcpi.ie/faculties/obstetricians-and-gynaecologists/national-clinical-guidelines-in-obstetrics-and-gynaecology/