

## Intrapartum care for women with existing medical conditions or obstetric complications and their babies

### [N] Evidence review for intrapartum haemorrhage

*NICE guideline <TBC at publication>*

*Evidence reviews for women at high risk of adverse outcomes for themselves and/or their baby because of obstetric complications or other reasons*

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*Developed by the National Guideline Alliance hosted by the Royal College of Obstetricians and Gynaecologists*



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# 1 Intrapartum care for women with 2 intrapartum haemorrhage – 3 management of intrapartum 4 haemorrhage

## Review question

6 What is the optimal management for intrapartum haemorrhage?

## Introduction

8 The aim of this review is to determine the optimal management for intrapartum  
9 haemorrhage.

## 10 Summary of the protocol

11 See Table 1 for a summary of the population, intervention, comparison and outcome  
12 (PICO) characteristics of this review.

### 13 Table 1: Summary of the protocol (PICO table)

<b>Population</b>	<p>Women with intrapartum haemorrhage.</p> <p>Women with bleeding disorders and those on anti-coagulant therapy will be excluded (they are covered by reviews in the part of the guideline that focuses on women at high risk of adverse outcomes for themselves and/or their baby because of existing maternal medical conditions)</p>
<b>Intervention</b>	<p><u>Intervention 1</u> Making a decision on expediting birth based on 1 or more risk factors or intervention thresholds identified by the following observations:</p> <ul style="list-style-type: none"> <li>• history</li> <li>• heart rate</li> <li>• temperature</li> <li>• respiratory rate</li> <li>• oxygen saturation</li> <li>• urine output</li> <li>• AVPU ('alert, voice, pain, unresponsive')</li> <li>• blood pressure</li> <li>• pain (presence/absence or validated pain scale)</li> <li>• amount of bleeding</li> <li>• how the woman is feeling (for example, faint)</li> </ul> <p><u>Intervention 2</u> Expediting the birth by caesarean section</p>

	<p><u>Intervention 3</u> Amniotomy</p> <p><u>Intervention 4</u> Oxytocin</p> <p><u>Intervention 5</u> Amniotomy plus oxytocin</p>
<b>Comparison</b>	<p><u>Comparison 1</u> Making a decision on expediting birth based on different risk factors or intervention thresholds identified by the same observations as in the intervention group:</p> <ul style="list-style-type: none"> <li>• history</li> <li>• heart rate</li> <li>• temperature</li> <li>• respiratory rate</li> <li>• oxygen saturation</li> <li>• urine output</li> <li>• AVPU ('alert, voice, pain, unresponsive')</li> <li>• blood pressure</li> <li>• pain (presence/ absence or validated pain scales)</li> <li>• amount of bleeding</li> <li>• how the woman is feeling (for example faint)</li> </ul> <p><u>Comparison 2:</u> Expediting the birth by instrumental vaginal birth</p> <p><u>Comparison 3:</u> No amniotomy</p> <p><u>Comparison 4:</u> No oxytocin</p> <p><u>Comparison 5:</u> Amniotomy only, oxytocin only or neither</p>
<b>Outcome</b>	<p>For the woman:</p> <ul style="list-style-type: none"> <li>• major morbidities <ul style="list-style-type: none"> <li>○ shock, collapse or need for resuscitation</li> <li>○ disseminated intravascular coagulation</li> <li>○ renal failure</li> <li>○ postnatal haemoglobin level</li> <li>○ major or severe primary intrapartum haemorrhage (defined as blood loss &gt;1000 ml )</li> <li>○ postpartum haemorrhage, including secondary postpartum haemorrhage</li> </ul> </li> <li>• mortality</li> <li>• woman's experience of labour and birth, including experience of the birth companion, separation of the woman and baby and breastfeeding initiation</li> </ul>





- mode of birth
- further interventions such as additional uterotonics, surgery, brace suture, intrauterine balloon, cell salvage, hysterectomy, major blood vessel ligation, interventional radiology, or transfusion of blood products

For the baby:

- major morbidities (hypoxic ischaemic encephalopathy (HIE), cerebral palsy/neurodevelopmental disability/developmental delay, or neonatal anaemia)
- intrapartum stillbirth

1 AVPU: Alert, Voice, Pain, Unresponsive

2 For further details see the full review protocol in Appendix A – Review protocol. The  
3 search strategies are presented in Appendix B – Literature search strategies.

## **Clinical evidence**

### **Included studies**

6 No clinical evidence was identified for this review.

7 See the study selection flow chart in Appendix C – Clinical evidence study selection.

### **Excluded studies**

9 Studies not included in this review with reasons for their exclusion are listed in  
10 Appendix D.

## **Summary of clinical studies included in the evidence review**

12 No clinical evidence was identified for this review (and so there are no evidence  
13 tables in Appendix E – Clinical evidence tables). No meta-analysis was undertaken  
14 for this review (and so there are no forest plots in Appendix F – Forest plots).

## **Quality assessment of clinical studies included in the evidence review**

16 No clinical evidence was identified for this review (and so no quality assessment was  
17 undertaken and there are no GRADE tables in Appendix G – GRADE tables).

## **Economic evidence**

### **Included studies**

20 No economic evidence was identified for this review.

21 See the study selection flow chart in Supplement 2 (Health economics).

### **Excluded studies**

23 No full-text copies of articles were requested for this review and so there is no  
24 excluded studies list (see Supplement 2 (Health economics)).

## Summary of studies included in the economic evidence review

- 2 No economic evidence was identified for this review (and so there are no economic  
3 evidence tables in Supplement 2 (Health economics)).

## Economic model

- 5 No economic modelling was undertaken for this review because the committee  
6 agreed that other topics were higher priorities for economic evaluation (see  
7 Supplement 2 (Health economics)).

## Evidence statements

- 9 No clinical evidence was identified for this review.

## 1 Recommendations

- 11 N1. If there are signs of shock in a woman with intrapartum haemorrhage, proceed  
12 with immediate resuscitation.
- 13 N2. If a woman in labour has any vaginal blood loss other than a 'show', transfer her  
14 to obstetric-led care, in line with the NICE guideline on [intrapartum care for healthy  
15 women and babies](#).
- 16 N3. If a woman in labour has any vaginal blood loss other than a 'show':
- 17 • Take a history of the bleeding, asking about:
    - 18 ○ any associated symptoms, including pain
    - 19 ○ any specific concerns the woman may have
    - 20 ○ any previous uterine surgery.
  - 21 • Check previous scans for placental position.
  - 22 • Assess the volume of blood loss and characteristics of the blood, such as colour,  
23 and presence of clots or amniotic fluid.
  - 24 • Carry out a physical examination, including:
    - 25 ○ vital signs
    - 26 ○ abdominal palpation
    - 27 ○ speculum examination
    - 28 ○ vaginal examination if placenta praevia has been excluded
    - 29 ○ fetal heart auscultation.
  - 30 • Start continuous cardiotocography.
  - 31 • Take a blood sample to determine full blood count and blood group.
- 32 N4. Think about the possible causes of bleeding, including, for example:
- 33 • placental abruption
  - 34 • placenta praevia
  - 35 • uterine rupture
  - 36 • vasa praevia.
- 37 Recognise that in many cases no cause will be identifiable.

- 1 N5. If a woman in labour has any vaginal blood loss other than a 'show', agree and
- 2 document a management plan, with multidisciplinary involvement, including:
  - 3 • a senior obstetrician
  - 4 • a senior obstetric anaesthetist
  - 5 • a senior midwife
  - 6 • a labour ward coordinator.
- 7 N6. If a woman has intrapartum bleeding and her condition appears stable,
- 8 management should include:
  - 9 • establishing venous access
  - 10 • maternal monitoring (see recommendation K6 and table K2)
  - 11 • monitoring the fetal heart rate with continuous cardiotocography.
- 12 N7. If a woman with intrapartum bleeding has a large blood loss or her condition
- 13 causes concern, management should be in line with recommendation N6 and
- 14 include:
  - 15 • giving intravenous fluids urgently
  - 16 • seeking medical advice from a more experienced healthcare professional.
- 17 Additionally management may include:
  - 18 • triggering the local major haemorrhage protocol
  - 19 • taking blood for clotting studies and blood gases
  - 20 • expediting the birth
  - 21 • use of amniotomy or oxytocin.
- 22 N8. If a woman in labour has any vaginal blood loss other than a 'show', explain to
- 23 her and her birth companion(s) what is happening.
- 24 N9. The maternity service and ambulance service should have strategies in place to
- 25 respond quickly and appropriately if a woman has an intrapartum haemorrhage in
- 26 any setting. [This recommendation is adapted from the NICE guideline on
- 27 [intrapartum care for healthy women and babies](#).]
- 28 N10. If a woman in labour has vaginal blood loss typical of a 'show', follow the NICE
- 29 guideline on [intrapartum care for healthy women and babies](#).

### **3Rationale and impact**

#### **3Why the committee made the recommendations**

32 No evidence was found on management of intrapartum haemorrhage so the  
33 committee based recommendations on their expertise and knowledge of good  
34 practice and the recommendations for postpartum haemorrhage in the NICE  
35 guideline on intrapartum care for healthy women and babies. They agreed that a  
36 large blood loss may result in major shock, and this would be the first priority for  
37 treatment.

38 The committee agreed that when vaginal blood loss is more than a show it is  
39 important to transfer the woman to obstetric-led care. It is also important to determine  
40 the likely causes of the blood loss, and how the woman's health may deteriorate or  
41 stabilise. The committee agreed that speaking with the woman to gain the history,  
42 including any associated events, may help to determine the cause of  
43 bleeding.

- 1 The committee agreed that it was essential to talk with the woman and her birth
- 2 companion(s) to explain what is happening, what may happen and understand her
- 3 preferences.
  
- 4 The committee agreed that if a woman in labour has vaginal blood loss typical of a
- 5 'show' this is not detrimental to the woman or baby and for these women the NICE
- 6 guideline on intrapartum care for healthy women and babies should be followed.
  
- 7 The committee agreed that it is good practice that all maternity settings are equipped
- 8 to manage intrapartum haemorrhage.

### **Impact of the recommendations on practice**

- 10 The recommendations reflect current best practice but this may mean a change
- 11 practice in some units.

## **1The committee's discussion of the evidence**

### **1Interpreting the evidence**

#### **1The outcomes that matter most**

15 The committee prioritised major maternal morbidities as critical outcomes, including  
16 shock, collapse or need for resuscitation, disseminated intravascular coagulation,  
17 renal failure, postnatal haemoglobin level, major or severe primary intrapartum  
18 haemorrhage (defined as blood loss >1000 ml), and postpartum haemorrhage,  
19 including secondary postpartum haemorrhage. These morbidities have a  
20 considerable impact on clinical outcomes as well as the woman's experience of  
21 labour and birth, and on costs. The committee also prioritised major morbidities in the  
22 baby as critical outcomes, including hypoxic ischaemic encephalopathy (HIE),  
23 cerebral palsy, neurodevelopmental disability or developmental delay, and neonatal  
24 anaemia. These morbidities affect the rest of the baby's life. The committee  
25 prioritised intrapartum stillbirth as a critical outcome because this is the most serious  
26 and worst possible outcome for the baby and for the woman's experience. The  
27 committee rated maternal mortality as an important rather than critical outcome  
28 because it occurs less frequently than maternal morbidity. The committee rated the  
29 woman's experience of labour and birth, including experience of her birth  
30 companion(s), separation of the woman and baby, and breastfeeding initiation, as an  
31 important outcome because interventions for intrapartum haemorrhage can have a  
32 considerable impact on birth experience and on future birth choices. Moreover, some  
33 interventions can result in separation of the woman and baby, which can impact  
34 negatively on breastfeeding and perinatal mental health. The committee rated mode  
35 of birth as an important outcome because if different interventions can affect mode of  
36 birth, women need to be able to make an informed choice.

### **3The quality of the evidence**

38 No clinical evidence was identified for this review.

### **3Benefits and harms**

40 The committee agreed that where intrapartum haemorrhage has occurred, an initial  
41 assessment for shock would be the greatest priority and resuscitation should be  
42 conducted immediately.

- 1 The committee deemed accurate assessment of the volume of blood loss to be  
2 critical. If severe haemorrhage has occurred then there is risk of inadequate blood  
3 flow to the woman's vital organs and to the baby. The woman might have had an  
4 internal haemorrhage, and monitoring of vital signs would be needed as the volume  
5 of visible blood loss might not give the full picture. The committee agreed, therefore,  
6 that any blood loss other than a show (a bloodstained mucus plug) should be  
7 considered high risk and prompt transfer to obstetric-led care in line with the NICE  
8 guideline on [intrapartum care for healthy women and babies](#) (CG190).
- 9 The committee agreed that the woman herself can provide information relevant to the  
10 situation. For example, the woman may inform a healthcare professional if the blood  
11 loss was sudden or in relation to a specific event. Without this discussion the woman  
12 may not feel listened to, and there is the possibility that healthcare professionals  
13 might miss an opportunity to gain valuable information about the cause or  
14 progression of blood loss.
- 15 The assessments needed for a woman with intrapartum haemorrhage involve taking  
16 a history, assessing the volume of blood loss, carrying out a physical examination,  
17 starting continuous cardiotocography and taking a blood sample to determine full  
18 blood count and blood group. The possible causes of bleeding should be considered  
19 while recognising that often there will be no discernible cause.
- 20 The committee discussed that the management plan for an individual woman would  
21 depend on the outcome of the recommended assessments, and that the plan might  
22 need to be revised in light of ongoing assessments. The committee identified the  
23 essential members of an expanded multidisciplinary team needed to care for a  
24 women in labour with vaginal blood loss other than a show as a senior obstetrician, a  
25 senior obstetric anaesthetist, a senior midwife, and a labour ward coordinator (who,  
26 by definition, would be senior).
- 27 The committee agreed that management for a woman with intrapartum bleeding  
28 whose condition is stable should include establishing venous access, maternal  
29 monitoring as specified elsewhere in the guideline, and monitoring the fetal heart rate  
30 using continuous cardiotocography.
- 31 If intrapartum bleeding leads to a large blood loss or if the woman's condition causes  
32 concern, intravenous fluids should be given and advice should be sought from a  
33 more experienced healthcare professional. Some or all of the following  
34 supplementary management options should also be implemented according to the  
35 circumstances: triggering the local major haemorrhage protocol, taking blood for  
36 clotting studies and blood gases, expediting the birth, and use of amniotomy or  
37 oxytocin.
- 38 The committee discussed that the recommendations were listed sequentially,  
39 although in practice many of the assessments would occur simultaneously. The  
40 committee acknowledged that the need to establish venous access was relatively low  
41 down the list of recommendations because of the sequence of actions that should  
42 take place; however, it was deemed that in clinical practice this would happen while  
43 talking to the woman, and making other assessments. Additionally, any woman in  
44 labour experiencing vaginal blood loss other than a show should receive an  
45 explanation about what is happening and her preferences should be taken into  
46 account when determining management. Overall, the recommendations reflect a  
47 systematic and woman-centred approach to care.
- 48 The committee did not want potentially serious blood loss to be overlooked. Any  
49 bleeding should, therefore, be considered to be abnormal unless it

1 is confirmed to be a show. Characteristics of the blood lost are important in helping to  
2 identify a potential show or other blood loss (for example, colour and presence of  
3 clots, and whether the woman is in pain). Nevertheless, the committee felt it was  
4 important to note that some women will have a vaginal bleed and yet they will not  
5 need any intervention. The committee recommended, therefore, that if a woman in  
6 labour has a vaginal blood loss typical of a show then management should be in line  
7 with the NICE guideline on [intrapartum care for healthy women and babies](#) (CG190).

### **Cost effectiveness and resource use**

9 The committee noted that the major maternal morbidities associated with intrapartum  
10 haemorrhage have important cost implications in addition to their impact on clinical  
11 outcomes. Therefore, they considered that their recommendations would mitigate the  
12 risk of these outcomes and thus be cost effective.

13 The committee considered that good communication with the woman would promote  
14 cost effective management as the woman would often be able to provide valuable  
15 information on the cause or progression of blood loss. Similarly the committee noted  
16 that the recommended assessments would be relatively inexpensive to undertake but  
17 could provide important information that would help to prevent costly adverse  
18 outcomes for the woman and the baby.

19 The committee considered that their recommendations largely reflected current  
20 practice and therefore they did not anticipate a significant impact on NHS resources.

### **Other factors the committee took into account**

22 The committee used the recommendations in the NICE guideline on [intrapartum care  
23 for healthy women and babies](#) (CG190) to help develop their recommendations. In  
24 particular, the committee discussed how intrapartum haemorrhage could occur in any  
25 care setting and that maternity and ambulance services should, therefore, have  
26 strategies in place to respond quickly and appropriately as recommended in the  
27 NICE guideline on [intrapartum care for healthy women and babies](#) (CG190) in the  
28 case of postpartum haemorrhage.

## 1 **References**

- 2 No publications (other than publications that are freely available on the Internet) were
- 3 cited in the review(s) in this document and so there is no reference list.

# 1 Appendices

## Appendix A – Review protocol

### Intrapartum care for women with intrapartum haemorrhage – management 4 of intrapartum haemorrhage

Item	Details	Working notes
Area in the scope	Women at high risk of adverse outcomes for themselves and/or their baby because of obstetric complications or other reasons – intrapartum care for women with intrapartum haemorrhage – management of intrapartum haemorrhage	
Review question in the scope	What is the optimal management for intrapartum haemorrhage?	
Review question for the guideline	What is the optimal management for intrapartum haemorrhage?	
Objective	The aim of this review is to determine the optimal management for intrapartum haemorrhage. In developing the review protocol the committee was aware that in the UK there were 11 maternal deaths per 100,000 maternities due to haemorrhage between 2010 and 2012 (MBRRACE-UK 2014)	
Population and directness	<p>Women with intrapartum haemorrhage (defined as haemorrhage occurring in the first or second stage of labour)</p> <p>Women with bleeding disorders and women on anti-coagulants will be excluded (they are covered by the medical stream).</p> <p>Studies in which up to 34% of the women have multiple pregnancy will be included. Evidence in which any of the women have multiple pregnancy should be downgraded for indirectness.</p>	
Intervention	<p><u>Intervention 1</u></p> <p>Making a decision on expediting birth based on 1 or more risk factors or intervention thresholds identified by the following observations:</p> <ul style="list-style-type: none"> <li>• history</li> <li>• heart rate</li> <li>• temperature</li> <li>• respiratory rate</li> <li>• oxygen saturation</li> <li>• urine output</li> <li>• AVPU ('alert, voice, pain, unresponsive')</li> <li>• blood pressure</li> <li>• pain (presence/absence or validated pain scale)</li> <li>• amount of bleeding</li> </ul>	•



Item	Details	Working notes
	<ul style="list-style-type: none"> <li>• how the woman is feeling (for example, faint)</li> </ul> <p><u>Intervention 2</u></p> <ul style="list-style-type: none"> <li>• Expediting the birth by caesarean section</li> </ul> <p><u>Intervention 3</u></p> <ul style="list-style-type: none"> <li>• Amniotomy</li> </ul> <p><u>Intervention 4</u></p> <ul style="list-style-type: none"> <li>• Oxytocin</li> </ul> <p><u>Intervention 5</u></p> <ul style="list-style-type: none"> <li>• Amniotomy plus oxytocin</li> </ul>	
Comparison	<p><u>Comparison 1</u> Making a decision on expediting birth based on different risk factors or intervention thresholds identified by the same observations as in the intervention group:</p> <ul style="list-style-type: none"> <li>• history</li> <li>• heart rate</li> <li>• temperature</li> <li>• respiratory rate</li> <li>• oxygen saturation</li> <li>• urine output</li> <li>• AVPU ('alert, voice, pain, unresponsive')</li> <li>• blood pressure</li> <li>• pain (presence/ absence or validated pain scales)</li> <li>• amount of bleeding</li> <li>• how the woman is feeling (for example faint)</li> </ul> <p><u>Comparison 2:</u></p> <ul style="list-style-type: none"> <li>• Expediting the birth by instrumental vaginal birth</li> </ul> <p><u>Comparison 3:</u></p> <ul style="list-style-type: none"> <li>• No amniotomy</li> </ul> <p><u>Comparison 4:</u></p> <ul style="list-style-type: none"> <li>• No oxytocin</li> </ul> <p><u>Comparison 5:</u></p> <ul style="list-style-type: none"> <li>• Amniotomy only, oxytocin only or neither</li> </ul>	
Outcomes	<p>Critical outcomes:</p> <ul style="list-style-type: none"> <li>• for the woman: <ul style="list-style-type: none"> <li>○ major morbidities <ul style="list-style-type: none"> <li>- shock/collapse/need for resuscitation</li> <li>- disseminated intravascular coagulation</li> <li>- renal failure</li> <li>- postnatal haemoglobin level</li> </ul> </li> </ul> </li> </ul>	

Item	Details	Working notes
	<ul style="list-style-type: none"> <li>- major or severe primary intrapartum haemorrhage (defined as blood loss &gt;1000 ml )</li> <li>- postpartum haemorrhage, including secondary postpartum haemorrhage</li> <li>• for the baby:               <ul style="list-style-type: none"> <li>○ major morbidities (hypoxic ischaemic encephalopathy (HIE), cerebral palsy/neurodevelopmental disability/developmental delay, or neonatal anaemia)</li> <li>○ intrapartum stillbirth</li> </ul> </li> </ul> <p>Important outcomes:</p> <ul style="list-style-type: none"> <li>• for the woman:               <ul style="list-style-type: none"> <li>○ mortality</li> <li>○ woman's experience of labour and birth, including experience of the birth companion, separation of the woman and baby and breastfeeding initiation</li> <li>○ mode of birth (not relevant for comparison 2)</li> </ul> </li> </ul> <p>Outcomes of limited importance:</p> <ul style="list-style-type: none"> <li>• for the woman:               <ul style="list-style-type: none"> <li>○ further interventions such as additional uterotonics, surgery, brace suture, intrauterine balloon, cell salvage, hysterectomy, major blood vessel ligation, interventional radiology, or transfusion of blood products</li> </ul> </li> </ul>	
Importance of outcomes	<p>Preliminary classification of the outcomes for decision making:</p> <ul style="list-style-type: none"> <li>• critical (up to 3 outcomes)</li> <li>• important but not critical (up to 3 outcomes)</li> <li>• of limited importance (1 outcome)</li> </ul>	
Setting	Any birth setting	
Stratified, subgroup and adjusted analyses	<p>Groups that will be reviewed and analysed separately:</p> <ul style="list-style-type: none"> <li>• causes of intrapartum haemorrhage:               <ul style="list-style-type: none"> <li>○ placenta praevia</li> <li>○ abruption</li> <li>○ vasa praevia</li> <li>○ unknown cause</li> </ul> </li> <li>• antepartum anaemia</li> <li>• stage of labour</li> <li>• women who decline blood products</li> </ul> <p>In the presence of heterogeneity, the following subgroups will be considered for sensitivity analysis:</p> <ul style="list-style-type: none"> <li>• none</li> </ul> <p>Potential confounders:</p> <ul style="list-style-type: none"> <li>• age</li> <li>• body mass index</li> <li>• antepartum haemorrhage</li> </ul>	

Item	Details	Working notes
Language	English	
Study design	<ul style="list-style-type: none"> <li>Published full text papers only</li> <li>Systematic reviews</li> <li>RCTs</li> <li>Only if RCTs unavailable or there is limited data to inform decision making: <ul style="list-style-type: none"> <li>prospective or retrospective comparative observational studies (including cohort and case-control studies)</li> </ul> </li> <li>Prospective study designs will be prioritised over retrospective study designs</li> <li>Conference abstracts will not be considered</li> </ul>	
Search strategy	<p>Sources to be searched: Medline, Medline In-Process, CCTR, CDSR, DARE, HTA and Embase.</p> <p>Limits (e.g. date, study design): All study designs. Apply standard animal/non-English language filters. No date limit.</p> <p>Supplementary search techniques: No supplementary search techniques were used.</p> <p>See Appendix B – Literature search strategies for full strategies</p>	
Review strategy	<p>Appraisal of methodological quality:</p> <ul style="list-style-type: none"> <li>the methodological quality of each study will be assessed using checklists recommended in the NICE guidelines manual 2014 (for example, AMSTAR or ROBIS for systematic reviews, and Cochrane RoB tool for RCTs) and the quality of the evidence for each outcome (that is, across studies) will be assessed using GRADE</li> <li>if studies report only p-values, this information will be recorded in GRADE tables without an assessment of imprecision</li> </ul> <p>Synthesis of data:</p> <ul style="list-style-type: none"> <li>meta-analysis will be conducted where appropriate</li> <li>default MIDs will be used; 0.8 and 1.25 for dichotomous outcomes; 0.5 times the SD of the measurement in the control arm (or median score across control arms if multiple studies are included) for continuous outcomes</li> <li>for continuous data, change scores will be used in preference to final scores for data from non-RCT studies; final and change scores will not be pooled; if any study reports both, the method used in the majority of studies will be adopted</li> </ul>	<p>Review questions selected as high priorities for health economic analysis (and those selected as medium priorities and where health economic analysis could influence recommendations) will be subject to dual weeding and study selection; any discrepancies will be resolved through discussion between the first and second reviewers or by reference to a third person. This review question was not prioritised for health economic analysis and so no formal dual weeding, study selection (inclusion/exclusion) or data extraction into evidence tables will be undertaken.</p> <p>However, internal (NGA) quality assurance processes</p>

Item	Details	Working notes
		will include consideration of the outcomes of weeding, study selection and data extraction and the committee will review the results of study selection and data extraction
Equalities	<p>Equalities considerations will be considered systematically in relation to the available evidence and draft recommendations.</p> <p>The guideline scope includes women with cognitive or physical disability as populations for whom there may be equalities issues.</p> <p>Women who have received no antenatal care will be considered as a subgroup for all systematic reviews performed within the medical conditions work stream and a specific question has been included in the obstetric complications work stream for this population.</p>	
Notes/additional information	None	
Key papers	<ul style="list-style-type: none"> <li>• MBRRACE-UK: Saving Lives, Improving Mothers' Care, 2014 (<a href="https://www.npeu.ox.ac.uk/downloads/files/mbrrace-uk/reports/Saving%20Lives%20Improving%20Mothers%20Care%20report%202014%20Full.pdf">https://www.npeu.ox.ac.uk/downloads/files/mbrrace-uk/reports/Saving%20Lives%20Improving%20Mothers%20Care%20report%202014%20Full.pdf</a>)</li> </ul>	

- 1 AMSTAR: *Assessing the Methodological Quality of Systematic Reviews*; CDSR: *Cochrane Database of Systematic Reviews*; CENTRAL: *Cochrane Central Register of Controlled Trials*; CTG: *cardiotocography*; DARE: *Database of Abstracts of Reviews of Effects*; FBS: *fetal blood sampling*;
- 4 GRADE: *Grading of Recommendations Assessment, Development and Evaluation*; HTA: *Health Technology Assessment*; MID: *minimally important difference*; NGA: *National Guideline Alliance*; NICE: *National Institute for Health and Care Excellence*; NICU: *neonatal intensive care unit*; RCT: *randomised controlled trial*; RoB: *risk of bias*; SD: *standard deviation*; ROBIS: *Risk of Bias in Systematic Reviews*

## Appendix B – Literature search strategies

### Intrapartum care for women with intrapartum haemorrhage – management of 3 intrapartum haemorrhage

**Database: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-5 Indexed Citations**

#	Searches
1	PERIPARTUM PERIOD/
2	PARTURITION/
3	LABOR, OBSTETRIC/
4	UTERINE CONTRACTION/
5	LABOR ONSET/
6	LABOR STAGE, FIRST/
7	LABOR STAGE, SECOND/
8	OBSTETRIC LABOR, PREMATURE/
9	DELIVERY, OBSTETRIC/
10	(labo?r or partur\$ or intra?part\$ or peri?part\$).ti,ab.
11	or/1-10
12	HEMORRHAGE/
13	SHOCK, HEMORRHAGIC/
14	UTERINE HEMORRHAGE/
15	or/12-14
16	11 and 15
17	(intra?part\$ adj5 (h?emorrhag\$ or bleed\$)).ti,ab.
18	((labo?r or partur\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$)).ti,ab.
19	or/16-18
20	expedi?t\$.ti,ab.
21	(deliver\$ adj1 immediat\$).ti,ab.
22	DECISION MAKING/
23	((make? or making) adj3 decision?).ti,ab.
24	RISK ASSESSMENT/
25	(risk? adj3 (assess\$ or stratif\$ or screen\$ or manag\$)).ti,ab.
26	MEDICAL HISTORY TAKING/
27	(history adj3 (take or taking)).ti,ab.
28	(history adj3 (clinical or obstetric\$)).ti,ab.
29	exp VITAL SIGNS/
30	Vital Sign?.ti,ab.
31	Heart Rate?.ti,ab.
32	Temperature?.ti,ab.

#	Searches
33	(Respirat\$ adj3 rate?).ti,ab.
34	OXIMETRY/
35	oximetr\$.ti,ab.
36	(oxygen adj3 saturat\$).ti,ab.
37	(urin\$ adj3 output?).ti,ab.
38	"alert voice pain unresponsive".ti,ab.
39	AVPU.ti,ab.
40	((Blood or systolic or diastolic) adj3 pressure?).ti,ab.
41	PAIN/
42	ACUTE PAIN/
43	CHRONIC PAIN/
44	Pain\$.ti,ab.
45	((grade? or grading or severit\$ or classif\$ or index\$ or indices or degree? or threshold? or define? or defining or criteri\$ or cut off? or parameter? or below or minimal or low\$ or decreas\$ or abnormal\$ or excessive\$ or concern\$) adj5 Blood adj3 (loss or losing)).ti,ab.
46	((grade? or grading or severit\$ or classif\$ or index\$ or indices or degree? or threshold? or define? or defining or criteri\$ or cut off? or parameter? or below or minimal or low\$ or decreas\$ or abnormal\$ or excessive\$ or concern\$) adj3 Bleed\$).ti,ab.
47	(wom?n? adj3 feel\$).ti,ab.
48	SYNCOPE/
49	syncope.ti,ab.
50	(fainting or fainted).ti,ab.
51	(feel\$ adj3 faint\$).ti,ab.
52	(light headed\$ or lightheaded\$).ti,ab.
53	or/20-52
54	exp CESAREAN SECTION/
55	(c?esar#an\$ or c section\$ or csection\$ or (deliver\$ adj3 abdom\$)).ti,ab.
56	or/54-55
57	exp EXTRACTION, OBSTETRICAL/
58	((extract\$ or vacuum\$) adj3 (birth\$ or born or deliver\$ or obstetric\$)).ti,ab.
59	(vacuum\$ adj3 extract\$).ti,ab.
60	ventouse?.ti,ab.
61	OBSTETRICAL FORCEPS/
62	forcep?.ti,ab.
63	((assist\$ or instrument\$) adj3 (birth\$ or born or deliver\$)).ti,ab.
64	or/57-63
65	*DELIVERY, OBSTETRIC/mt [Methods]
66	(mode? adj3 birth?).ti,ab.
67	((route? or mode?) adj3 deliver\$).ti,ab.
68	or/65-67
69	AMNION/su [Surgery]

#	Searches
70	Amniotom\$.ti,ab.
71	(artificial\$ adj3 ruptur\$ adj3 membrane?).ti,ab.
72	AROM.ti,ab.
73	or/69-72
74	OXYTOCIN/
75	(Oxytocin? or Pitocin? or syntocinon?).mp.
76	or/74-75
77	UK Obstetric Surveillance System.ti,ab.
78	UKOSS.ti,ab.
79	"Mothers and babies? reducing risk through audits and confidential enquiries across the UK".ti,ab.
80	MBRRACE.ti,ab.
81	Scottish confidential audit of severe maternal morbidity.ti,ab.
82	SCASMM.ti,ab.
83	"Confidential Enquiry into Maternal and Child Health".ti,ab.
84	CEMACH.ti,ab.
85	or/77-84
86	*HEMORRHAGE/pc [Prevention & Control]
87	((labo?r or partur\$ or intra?part\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$) adj10 (guideline? or protocol? or pathway? or care plan\$)).ti,ab.
88	(manag\$ adj3 (labo?r or partur\$ or intra?part\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$)).ti,ab.
89	19 and 53
90	19 and 56 and 64
91	19 and 68
92	19 and 73
93	19 and 76
94	19 and 85
95	11 and 86
96	or/87-95
97	limit 96 to english language
98	LETTER/
99	EDITORIAL/
100	NEWS/
101	exp HISTORICAL ARTICLE/
102	ANECDOTES AS TOPIC/
103	COMMENT/
104	CASE REPORT/
105	(letter or comment*).ti.
106	or/98-105
107	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.

#	Searches
108	106 not 107
109	ANIMALS/ not HUMANS/
110	exp ANIMALS, LABORATORY/
111	exp ANIMAL EXPERIMENTATION/
112	exp MODELS, ANIMAL/
113	exp RODENTIA/
114	(rat or rats or mouse or mice).ti.
115	or/108-114
116	97 not 115

**Database: Cochrane Central Register of Controlled Trials**

#	Searches
1	PERIPARTUM PERIOD/
2	PARTURITION/
3	LABOR, OBSTETRIC/
4	UTERINE CONTRACTION/
5	LABOR ONSET/
6	LABOR STAGE, FIRST/
7	LABOR STAGE, SECOND/
8	OBSTETRIC LABOR, PREMATURE/
9	DELIVERY, OBSTETRIC/
10	(labo?r or partur\$ or intra?part\$ or peri?part\$).ti,ab.
11	or/1-10
12	HEMORRHAGE/
13	SHOCK, HEMORRHAGIC/
14	UTERINE HEMORRHAGE/
15	or/12-14
16	11 and 15
17	(intra?part\$ adj5 (h?emorrhag\$ or bleed\$)).ti,ab.
18	((labo?r or partur\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$)).ti,ab.
19	or/16-18
20	expedi?t\$.ti,ab.
21	(deliver\$ adj1 immediat\$).ti,ab.
22	DECISION MAKING/
23	((make? or making) adj3 decision?).ti,ab.
24	RISK ASSESSMENT/
25	(risk? adj3 (assess\$ or stratif\$ or screen\$ or manag\$)).ti,ab.
26	MEDICAL HISTORY TAKING/
27	(history adj3 (take or taking)).ti,ab.
28	(history adj3 (clinical or obstetric\$)).ti,ab.



#	Searches
29	exp VITAL SIGNS/
30	Vital Sign?.ti,ab,kw.
31	Heart Rate?.ti,ab,kw.
32	Temperature?.ti,ab.
33	(Respirat\$ adj3 rate?).ti,ab.
34	OXIMETRY/
35	oximetr\$.ti,ab,kw.
36	(oxygen adj3 saturat\$).ti,ab.
37	(urin\$ adj3 output?).ti,ab.
38	"alert voice pain unresponsive".ti,ab.
39	AVPU.ti,ab.
40	((Blood or systolic or diastolic) adj3 pressure?).ti,ab.
41	PAIN/
42	ACUTE PAIN/
43	CHRONIC PAIN/
44	Pain\$.ti,ab.
45	((grade? or grading or severit\$ or classif\$ or index\$ or indices or degree? or threshold? or define? or defining or criteri\$ or cut off? or parameter? or below or minimal or low\$ or decreas\$ or abnormal\$ or excessive\$ or concern\$) adj5 Blood adj3 (loss or losing)).ti,ab.
46	((grade? or grading or severit\$ or classif\$ or index\$ or indices or degree? or threshold? or define? or defining or criteri\$ or cut off? or parameter? or below or minimal or low\$ or decreas\$ or abnormal\$ or excessive\$ or concern\$) adj3 Bleed\$).ti,ab.
47	(wom?n? adj3 feel\$).ti,ab.
48	SYNCOPE/
49	syncope.ti,ab,kw.
50	(fainting or fainted).ti,ab.
51	(feel\$ adj3 faint\$).ti,ab.
52	(light headed\$ or lightheaded\$).ti,ab.
53	or/20-52
54	exp CESAREAN SECTION/
55	(c?esar#an\$ or c section\$ or csection\$ or (deliver\$ adj3 abdom\$)).ti,ab.
56	or/54-55
57	exp EXTRACTION, OBSTETRICAL/
58	((extract\$ or vacuum\$) adj3 (birth\$ or born or deliver\$ or obstetric\$)).ti,ab.
59	(vacuum\$ adj3 extract\$).ti,ab.
60	ventouse?.ti,ab.
61	OBSTETRICAL FORCEPS/
62	forcep?.ti,ab,kw.
63	((assist\$ or instrument\$) adj3 (birth\$ or born or deliver\$)).ti,ab.
64	or/57-63
65	*DELIVERY, OBSTETRIC/mt [Methods]

#	Searches
66	(mode? adj3 birth?).ti,ab.
67	((route? or mode?) adj3 deliver\$).ti,ab.
68	or/65-67
69	AMNION/su [Surgery]
70	Amniotom\$.ti,ab,kw.
71	(artificial\$ adj3 ruptur\$ adj3 membrane?).ti,ab.
72	AROM.ti,ab.
73	or/69-72
74	OXYTOCIN/
75	(Oxytocin? or Pitocin? or syntocinon?).mp.
76	or/74-75
77	UK Obstetric Surveillance System.ti,ab.
78	UKOSS.ti,ab.
79	"Mothers and babies? reducing risk through audits and confidential enquiries across the UK".ti,ab.
80	MBRRACE.ti,ab.
81	Scottish confidential audit of severe maternal morbidity.ti,ab.
82	SCASMM.ti,ab.
83	"Confidential Enquiry into Maternal and Child Health".ti,ab.
84	CEMACH.ti,ab.
85	or/77-84
86	*HEMORRHAGE/pc [Prevention & Control]
87	((labo?r or partur\$ or intra?part\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$) adj10 (guideline? or protocol? or pathway? or care plan\$)).ti,ab.
88	(manag\$ adj3 (labo?r or partur\$ or intra?part\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$)).ti,ab.
89	19 and 53
90	19 and 56 and 64
91	19 and 68
92	19 and 73
93	19 and 76
94	19 and 85
95	11 and 86
96	or/87-95

#### Database: Cochrane Database of Systematic Reviews

#	Searches
1	PERIPARTUM PERIOD.kw.
2	PARTURITION.kw.
3	LABOR, OBSTETRIC.kw.
4	UTERINE CONTRACTION.kw.

#	Searches
5	LABOR ONSET.kw.
6	LABOR STAGE, FIRST.kw.
7	LABOR STAGE, SECOND.kw.
8	OBSTETRIC LABOR, PREMATURE.kw.
9	DELIVERY, OBSTETRIC.kw.
10	(labo?r or partur\$ or intra?part\$ or peri?part\$).ti,ab.
11	or/1-10
12	HEMORRHAGE.kw.
13	SHOCK, HEMORRHAGIC.kw.
14	UTERINE HEMORRHAGE.kw.
15	or/12-14
16	11 and 15
17	(intra?part\$ adj5 (h?emorrhag\$ or bleed\$)).ti,ab.
18	((labo?r or partur\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$)).ti,ab.
19	or/16-18
20	expedi?t\$.ti,ab.
21	(deliver\$ adj1 immediat\$).ti,ab.
22	DECISION MAKING.kw.
23	((make? or making) adj3 decision?).ti,ab.
24	RISK ASSESSMENT.kw.
25	(risk? adj3 (assess\$ or stratif\$ or screen\$ or manag\$)).ti,ab.
26	MEDICAL HISTORY TAKING.kw.
27	(history adj3 (take or taking)).ti,ab.
28	(history adj3 (clinical or obstetric\$)).ti,ab.
29	VITAL SIGNS.kw.
30	Vital Sign?.ti,ab.
31	Heart Rate?.ti,ab.
32	Temperature?.ti,ab.
33	(Respirat\$ adj3 rate?).ti,ab.
34	OXIMETRY.kw.
35	oximetr\$.ti,ab.
36	(oxygen adj3 saturat\$).ti,ab.
37	(urin\$ adj3 output?).ti,ab.
38	"alert voice pain unresponsive".ti,ab.
39	AVPU.ti,ab.
40	((Blood or systolic or diastolic) adj3 pressure?).ti,ab.
41	PAIN.kw.
42	ACUTE PAIN.kw.
43	CHRONIC PAIN.kw.
44	Pain\$.ti,ab.

#	Searches
45	((grade? or grading or severit\$ or classif\$ or index\$ or indices or degree? or threshold? or define? or defining or criteri\$ or cut off? or parameter? or below or minimal or low\$ or decreas\$ or abnormal\$ or excessive\$ or concern\$) adj5 Blood adj3 (loss or losing)).ti,ab.
46	((grade? or grading or severit\$ or classif\$ or index\$ or indices or degree? or threshold? or define? or defining or criteri\$ or cut off? or parameter? or below or minimal or low\$ or decreas\$ or abnormal\$ or excessive\$ or concern\$) adj3 Bleed\$).ti,ab.
47	(wom?n? adj3 feel\$).ti,ab.
48	SYNCOPE.kw.
49	syncope.ti,ab.
50	(fainting or fainted).ti,ab.
51	(feel\$ adj3 faint\$).ti,ab.
52	(light headed\$ or lightheaded\$).ti,ab.
53	or/20-52
54	CESAREAN SECTION.kw.
55	(c?esar#an\$ or c section\$ or csection\$ or (deliver\$ adj3 abdom\$)).ti,ab.
56	or/54-55
57	EXTRACTION, OBSTETRICAL.kw.
58	((extract\$ or vacuum\$) adj3 (birth\$ or born or deliver\$ or obstetric\$)).ti,ab.
59	(vacuum\$ adj3 extract\$).ti,ab.
60	ventouse?.ti,ab.
61	OBSTETRICAL FORCEPS.kw.
62	forcep?.ti,ab.
63	((assist\$ or instrument\$) adj3 (birth\$ or born or deliver\$)).ti,ab.
64	or/57-63
65	(mode? adj3 birth?).ti,ab.
66	((route? or mode?) adj3 deliver\$).ti,ab.
67	or/65-66
68	Amniotom\$.ti,ab.
69	(artificial\$ adj3 ruptur\$ adj3 membrane?).ti,ab.
70	AROM.ti,ab.
71	or/68-70
72	OXYTOCIN.kw.
73	(Oxytocin? or Pitocin? or syntocinon?).mp.
74	or/72-73
75	UK Obstetric Surveillance System.ti,ab.
76	UKOSS.ti,ab.
77	"Mothers and babies? reducing risk through audits and confidential enquiries across the UK".ti,ab.
78	MBRRACE.ti,ab.
79	Scottish confidential audit of severe maternal morbidity.ti,ab.
80	SCASMM.ti,ab.

#	Searches
81	"Confidential Enquiry into Maternal and Child Health".ti,ab.
82	CEMACH.ti,ab.
83	or/75-82
84	((labo?r or partur\$ or intra?part\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$) adj10 (guideline? or protocol? or pathway? or care plan\$)).ti,ab.
85	(manag\$ adj3 (labo?r or partur\$ or intra?part\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$)).ti,ab.
86	19 and 53
87	19 and 56 and 64
88	19 and 67
89	19 and 71
90	19 and 74
91	19 and 83
92	or/84-91

**Database: Database of Abstracts of Reviews of Effects**

#	Searches
1	PERIPARTUM PERIOD.kw.
2	PARTURITION.kw.
3	LABOR, OBSTETRIC.kw.
4	UTERINE CONTRACTION.kw.
5	LABOR ONSET.kw.
6	LABOR STAGE, FIRST.kw.
7	LABOR STAGE, SECOND.kw.
8	OBSTETRIC LABOR, PREMATURE.kw.
9	DELIVERY, OBSTETRIC.kw.
10	((labo?r or partur\$ or intra?part\$ or peri?part\$).tw,tx.
11	or/1-10
12	HEMORRHAGE.kw.
13	SHOCK, HEMORRHAGIC.kw.
14	UTERINE HEMORRHAGE.kw.
15	or/12-14
16	11 and 15
17	(intra?part\$ adj5 (h?emorrhag\$ or bleed\$)).tw,tx.
18	((labo?r or partur\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$)).tw,tx.
19	or/16-18
20	expedi?t\$.tw,tx.
21	(deliver\$ adj1 immediat\$).tw,tx.
22	DECISION MAKING.kw.
23	((make? or making) adj3 decision?).tw,tx.

#	Searches
24	RISK ASSESSMENT.kw.
25	(risk? adj3 (assess\$ or stratif\$ or screen\$ or manag\$)).tw,tx.
26	MEDICAL HISTORY TAKING.kw.
27	(history adj3 (take or taking)).tw,tx.
28	(history adj3 (clinical or obstetric\$)).tw,tx.
29	VITAL SIGNS.kw.
30	Vital Sign?.tw,tx.
31	Heart Rate?.tw,tx.
32	Temperature?.tw,tx.
33	(Respirat\$ adj3 rate?).tw,tx.
34	OXIMETRY.kw.
35	oximetr\$.tw,tx.
36	(oxygen adj3 saturat\$).tw,tx.
37	(urin\$ adj3 output?).tw,tx.
38	"alert voice pain unresponsive".tw,tx.
39	AVPU.tw,tx.
40	((Blood or systolic or diastolic) adj3 pressure?).tw,tx.
41	PAIN.kw.
42	ACUTE PAIN.kw.
43	CHRONIC PAIN.kw.
44	Pain\$.tw,tx.
45	((grade? or grading or severit\$ or classif\$ or index\$ or indices or degree? or threshold? or define? or defining or criteri\$ or cut off? or parameter? or below or minimal or low\$ or decreas\$ or abnormal\$ or excessive\$ or concern\$) adj5 Blood adj3 (loss or losing)).tw,tx.
46	((grade? or grading or severit\$ or classif\$ or index\$ or indices or degree? or threshold? or define? or defining or criteri\$ or cut off? or parameter? or below or minimal or low\$ or decreas\$ or abnormal\$ or excessive\$ or concern\$) adj3 Bleed\$).tw,tx.
47	(wom?n? adj3 feel\$).tw,tx.
48	SYNCOPE.kw.
49	syncope.tw,tx.
50	(fainting or fainted).tw,tx.
51	(feel\$ adj3 faint\$).tw,tx.
52	(light headed\$ or lightheaded\$).tw,tx.
53	or/20-52
54	CESAREAN SECTION.kw.
55	(c?esar#an\$ or c section\$ or csection\$ or (deliver\$ adj3 abdom\$)).tw,tx.
56	or/54-55
57	EXTRACTION, OBSTETRICAL.kw.
58	((extract\$ or vacuum\$) adj3 (birth\$ or born or deliver\$ or obstetric\$)).tw,tx.
59	(vacuum\$ adj3 extract\$).tw,tx.
60	ventouse?.tw,tx.

#	Searches
61	OBSTETRICAL FORCEPS.kw.
62	forcep?.tw,tx.
63	((assist\$ or instrument\$) adj3 (birth\$ or born or deliver\$)).tw,tx.
64	or/57-63
65	(mode? adj3 birth?).tw,tx.
66	((route? or mode?) adj3 deliver\$).tw,tx.
67	or/65-66
68	Amniotom\$.tw,tx.
69	(artificial\$ adj3 ruptur\$ adj3 membrane?).tw,tx.
70	AROM.tw,tx.
71	or/68-70
72	OXYTOCIN.kw.
73	(Oxytocin? or Pitocin? or syntocinon?).mp.
74	or/72-73
75	UK Obstetric Surveillance System.tw,tx.
76	UKOSS.tw,tx.
77	"Mothers and babies? reducing risk through audits and confidential enquiries across the UK".tw,tx.
78	MBRRACE.tw,tx.
79	Scottish confidential audit of severe maternal morbidity.tw,tx.
80	SCASMM.tw,tx.
81	"Confidential Enquiry into Maternal and Child Health".tw,tx.
82	CEMACH.tw,tx.
83	or/75-82
84	((labo?r or partur\$ or intra?part\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$) adj10 (guideline? or protocol? or pathway? or care plan\$)).tw,tx.
85	(manag\$ adj3 (labo?r or partur\$ or intra?part\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$)).tw,tx.
86	19 and 53
87	19 and 56 and 64
88	19 and 67
89	19 and 71
90	19 and 74
91	19 and 83
92	or/84-91

### Database: Health Technology Assessment

#	Searches
1	PERIPARTUM PERIOD/
2	PARTURITION/
3	LABOR, OBSTETRIC/

#	Searches
4	UTERINE CONTRACTION/
5	LABOR ONSET/
6	LABOR STAGE, FIRST/
7	LABOR STAGE, SECOND/
8	OBSTETRIC LABOR, PREMATURE/
9	DELIVERY, OBSTETRIC/
10	(labo?r or partur\$ or intra?part\$ or peri?part\$).tw.
11	or/1-10
12	HEMORRHAGE/
13	SHOCK, HEMORRHAGIC/
14	UTERINE HEMORRHAGE/
15	or/12-14
16	11 and 15
17	(intra?part\$ adj5 (h?emorrhag\$ or bleed\$)).tw.
18	((labo?r or partur\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$)).tw.
19	or/16-18
20	expedi?t\$.tw.
21	(deliver\$ adj1 immediat\$).tw.
22	DECISION MAKING/
23	((make? or making) adj3 decision?).tw.
24	RISK ASSESSMENT/
25	(risk? adj3 (assess\$ or stratif\$ or screen\$ or manag\$)).tw.
26	MEDICAL HISTORY TAKING/
27	(history adj3 (take or taking)).tw.
28	(history adj3 (clinical or obstetric\$)).tw.
29	Vital Sign?.tw.
30	Heart Rate?.tw.
31	Temperature?.tw.
32	(Respirat\$ adj3 rate?).tw.
33	OXIMETRY/
34	oximetr\$.tw.
35	(oxygen adj3 saturat\$).tw.
36	(urin\$ adj3 output?).tw.
37	"alert voice pain unresponsive".tw.
38	AVPU.tw.
39	((Blood or systolic or diastolic) adj3 pressure?).tw.
40	PAIN/
41	ACUTE PAIN/
42	CHRONIC PAIN/
43	Pain\$.tw.



#	Searches
44	((grade? or grading or severit\$ or classif\$ or index\$ or indices or degree? or threshold? or define? or defining or criteri\$ or cut off? or parameter? or below or minimal or low\$ or decreas\$ or abnormal\$ or excessive\$ or concern\$) adj5 Blood adj3 (loss or losing)).tw.
45	((grade? or grading or severit\$ or classif\$ or index\$ or indices or degree? or threshold? or define? or defining or criteri\$ or cut off? or parameter? or below or minimal or low\$ or decreas\$ or abnormal\$ or excessive\$ or concern\$) adj3 Bleed\$).tw.
46	(wom?n? adj3 feel\$).tw.
47	SYNCOPE/
48	syncope.tw.
49	(fainting or fainted).tw.
50	(feel\$ adj3 faint\$).tw.
51	(light headed\$ or lightheaded\$).tw.
52	or/20-51
53	exp CESAREAN SECTION/
54	(c?esar#an\$ or c section\$ or csection\$ or (deliver\$ adj3 abdom\$)).tw.
55	or/53-54
56	exp EXTRACTION, OBSTETRICAL/
57	((extract\$ or vacuum\$) adj3 (birth\$ or born or deliver\$ or obstetric\$)).tw.
58	(vacuum\$ adj3 extract\$).tw.
59	ventouse?.tw.
60	OBSTETRICAL FORCEPS/
61	forcep?.tw.
62	((assist\$ or instrument\$) adj3 (birth\$ or born or deliver\$)).tw.
63	or/56-62
64	*DELIVERY, OBSTETRIC/mt [Methods]
65	(mode? adj3 birth?).tw.
66	((route? or mode?) adj3 deliver\$).tw.
67	or/64-66
68	AMNION/su [Surgery]
69	Amniotom\$.tw.
70	(artificial\$ adj3 ruptur\$ adj3 membrane?).tw.
71	AROM.tw.
72	or/68-71
73	OXYTOCIN/
74	(Oxytocin? or Pitocin? or syntocinon?).mp.
75	or/73-74
76	UK Obstetric Surveillance System.tw.
77	UKOSS.tw.
78	"Mothers and babies? reducing risk through audits and confidential enquiries across the UK".tw.
79	MBRRACE.tw.

#	Searches
80	Scottish confidential audit of severe maternal morbidity.tw.
81	SCASMM.tw.
82	"Confidential Enquiry into Maternal and Child Health".tw.
83	CEMACH.tw.
84	or/76-83
85	*HEMORRHAGE/pc [Prevention & Control]
86	((labo?r or partur\$ or intra?part\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$) adj10 (guideline? or protocol? or pathway? or care plan\$)).tw.
87	(manag\$ adj3 (labo?r or partur\$ or intra?part\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$)).tw.
88	19 and 52
89	19 and 55 and 63
90	19 and 67
91	19 and 72
92	19 and 75
93	19 and 84
94	11 and 85
95	or/86-94

**Database: Embase**

#	Searches
1	*BIRTH/
2	*LABOR/
3	*UTERUS CONTRACTION/
4	*LABOR ONSET/
5	LABOR STAGE 1/
6	LABOR STAGE 2/
7	*PREMATURE LABOR/
8	*OBSTETRIC DELIVERY/
9	INTRAPARTUM CARE/
10	(labo?r or partur\$ or intra?part\$ or peri?part\$).ti,ab.
11	or/1-10
12	*BLEEDING/
13	*HEMORRHAGIC SHOCK/
14	*UTERUS BLEEDING/
15	or/12-14
16	11 and 15
17	INTRAPARTUM HEMORRHAGE/
18	(intra?part\$ adj5 (h?emorrhag\$ or bleed\$)).ti,ab.
19	((labo?r or partur\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$)).ti,ab.
20	or/16-19

#	Searches
21	expedi?t\$.ti,ab.
22	(deliver\$ adj1 immediat\$).ti,ab.
23	*DECISION MAKING/
24	((make? or making) adj3 decision?).ti,ab.
25	*RISK ASSESSMENT/
26	(risk? adj3 (assess\$ or stratif\$ or screen\$ or manag\$)).ti,ab.
27	*ANAMNESIS/
28	(history adj3 (take or taking)).ti,ab.
29	(history adj3 (clinical or obstetric\$)).ti,ab.
30	*VITAL SIGN/
31	*HEART RATE MEASUREMENT/
32	*BODY TEMPERATURE MEASUREMENT/
33	*BREATHING RATE/
34	Vital Sign?.ti,ab.
35	Heart Rate?.ti,ab.
36	Temperature?.ti,ab.
37	(Respirat\$ adj3 rate?).ti,ab.
38	*OXIMETRY/
39	*OXYGEN SATURATION/
40	oximetr\$.ti,ab.
41	(oxygen adj3 saturat\$).ti,ab.
42	*URINE VOLUME/
43	(urin\$ adj3 output?).ti,ab.
44	"alert voice pain unresponsive".ti,ab.
45	AVPU.ti,ab.
46	*BLOOD PRESSURE MEASUREMENT/
47	((Blood or systolic or diastolic) adj3 pressure?).ti,ab.
48	*PAIN/
49	*CHRONIC PAIN/
50	Pain\$.ti.
51	Pain\$.ab. /freq=2
52	((grade? or grading or severit\$ or classif\$ or index\$ or indices or degree? or threshold? or define? or defining or criteri\$ or cut off? or parameter? or below or minimal or low\$ or decreas\$ or abnormal\$ or excessive\$ or concern\$) adj5 Blood adj3 (loss or losing)).ti,ab.
53	((grade? or grading or severit\$ or classif\$ or index\$ or indices or degree? or threshold? or define? or defining or criteri\$ or cut off? or parameter? or below or minimal or low\$ or decreas\$ or abnormal\$ or excessive\$ or concern\$) adj3 Bleed\$).ti,ab.
54	(wom?n? adj3 feel\$).ti,ab.
55	*FAINTNESS/
56	syncope.ti,ab.
57	(fainting or fainted).ti,ab.

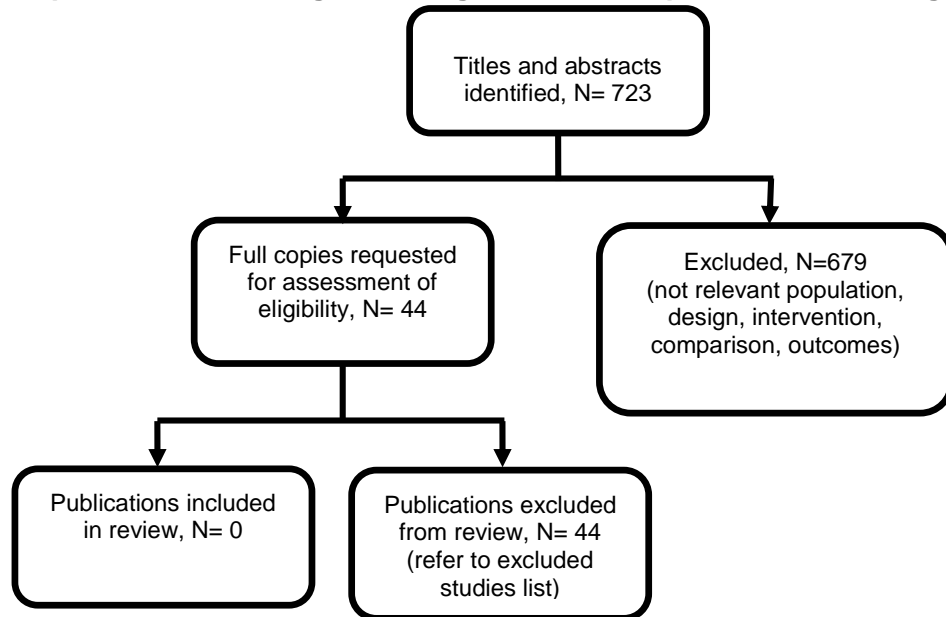
#	Searches
58	(feel\$ adj3 faint\$).ti,ab.
59	(light headed\$ or lightheaded\$).ti,ab.
60	or/21-59
61	exp CESAREAN SECTION/
62	(c?esar#an\$ or c section\$ or csection\$ or (deliver\$ adj3 abdom\$)).ti,ab.
63	or/60-61
64	VACUUM EXTRACTION/
65	((extract\$ or vacuum\$) adj3 (birth\$ or born or deliver\$ or obstetric\$)).ti,ab.
66	(vacuum\$ adj3 extract\$).ti,ab.
67	ventouse?.ti,ab.
68	FORCEPS DELIVERY/
69	OBSTETRICAL FORCEPS/
70	forcep?.ti,ab.
71	((assist\$ or instrument\$) adj3 (birth\$ or born or deliver\$)).ti,ab.
72	or/64-71
73	(mode? adj3 birth?).ti,ab.
74	((route? or mode?) adj3 deliver\$).ti,ab.
75	or/73-74
76	AMNIOTOMY/
77	Amniotom\$.ti,ab.
78	(artificial\$ adj3 ruptur\$ adj3 membrane?).ti,ab.
79	AROM.ti,ab.
80	or/76-79
81	OXYTOCIN/
82	(Oxytocin? or Pitocin? or syntocinon?).mp.
83	or/81-82
84	UK Obstetric Surveillance System.ti,ab.
85	UKOSS.ti,ab.
86	"Mothers and babies? reducing risk through audits and confidential enquiries across the UK".ti,ab.
87	MBRRACE.ti,ab.
88	Scottish confidential audit of severe maternal morbidity.ti,ab.
89	SCASMM.ti,ab.
90	"Confidential Enquiry into Maternal and Child Health".ti,ab.
91	CEMACH.ti,ab.
92	or/84-91
93	INTRAPARTUM HEMORRHAGE/pc [Prevention]
94	INTRAPARTUM HEMORRHAGE/th [Therapy]
95	((labo?r or partur\$ or intra?part\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$) adj10 (guideline? or protocol? or pathway? or care plan\$)).ti,ab.

#	Searches
96	(manag\$ adj3 (labo?r or partur\$ or intra?part\$ or peri?part\$) adj3 (h?emorrhag\$ or bleed\$)).ti,ab.
97	20 and 60
98	20 and 63 and 72
99	20 and 75
100	20 and 80
101	20 and 83
102	20 and 92
103	or/93-102
104	limit 103 to english language
105	letter.pt. or LETTER/
106	note.pt.
107	editorial.pt.
108	CASE REPORT/ or CASE STUDY/
109	(letter or comment*).ti.
110	or/105-109
111	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
112	110 not 111
113	ANIMAL/ not HUMAN/
114	NONHUMAN/
115	exp ANIMAL EXPERIMENT/
116	exp EXPERIMENTAL ANIMAL/
117	ANIMAL MODEL/
118	exp RODENT/
119	(rat or rats or mouse or mice).ti.
120	or/112-119
121	104 not 120

## Appendix C – Clinical evidence study selection

### Intrapartum care for women with intrapartum haemorrhage – management of intrapartum haemorrhage

4 **Figure 1: Flow diagram of clinical article selection for intrapartum care for women with**  
5 **intrapartum haemorrhage – management of intrapartum haemorrhage**



6

## Appendix D – Excluded studies

### Intrapartum care for women with intrapartum haemorrhage – management of 3 intrapartum haemorrhage

#### Clinical studies

Study	Reason for exclusion
Alexander, J. M., Wortman, A. C., Intrapartum Hemorrhage, <i>Obstetrics and Gynecology Clinics of North America</i> , 40, 15-26, 2013	Narrative article about causes and management of intrapartum haemorrhage
Artymuk, N., Surina, M., Risk factors for postpartum haemorrhage in high-risk obstetric hospital, <i>Journal of Perinatal Medicine</i> , 41, 2013	Conference abstract
Baird, Emily J., Identification and Management of Obstetric Hemorrhage, <i>Anesthesiology clinics</i> , 35, 15-34, 2017	Narrative article about the definition, cause and management of obstetric haemorrhage
Beltman, Jogchum, Van Den Akker, Thomas, Van Lonkhuijzen, Luc, Schmidt, Aniek, Chidakwani, Richard, Van Roosmalen, Jos, Beyond maternal mortality: obstetric hemorrhage in a Malawian district, <i>Acta Obstetrica et Gynecologica Scandinavica</i> , 90, 1423-7, 2011	Describes the incidence of antepartum and postpartum haemorrhage, and associated obstetric outcomes. No relevant comparison was reported
Blackwell, Sean C., Timing of delivery for women with stable placenta previa, <i>Seminars in Perinatology</i> , 35, 249-51, 2011	Narrative article about decision making for timing of birth across the late preterm and early-term periods
Calder, A. A., Oxytocics and tocolytics, <i>Clinics in obstetrics and gynaecology</i> , 8, 507-20, 1981	Narrative article about the use of oxytocics and tocolytics to control the uterus
Chervenak, F. A., Lee, Y., Hendler, M. A., Role of attempted vaginal delivery in the management of placental previa, <i>Obstetrics and Gynecology</i> , 64, 798-801, 1984	The study authors describe their experience with intrapartum management of placenta praevia. No relevant comparison was reported
Clark, B. F., Pitocin in obstetrics with suggested uses for conservation of blood in normal and complicated delivery, <i>The Journal of the Maine Medical Association</i> , 48, 115-7, 1957	A full-text copy of the article could not be obtained
Crochetiere, C., Obstetric emergencies, <i>Anesthesiology Clinics of North America</i> , 21, 111-25, 2003	Narrative article about the anaesthesiologist's role in managing critical obstetric events, including obstetric haemorrhage
Danisman, N., Kahyaoglu, S., Celen, S., Akselim, B., Tuncer, E. G., Timur, H., Kaymak, O., Kahyaoglu, I., The outcomes of surgical treatment modalities to decrease "near miss" maternal morbidity caused by peripartum hemorrhage, <i>European review for medical and pharmacological sciences</i> , 18, 1092-7, 2014	Assesses different management strategies for women with severe peripartum haemorrhage. No relevant comparison was reported
Dilla, Andrew J., Waters, Jonathan H., Yazer, Mark H., Clinical validation of risk stratification criteria for	Examines whether risk groups established in the California Maternal Quality Care Collaborative guidelines

Study	Reason for exclusion
peripartum hemorrhage, <i>Obstetrics and Gynecology</i> , 122, 120-6, 2013	predict the risk of a significant peripartum haemorrhage in women undergoing labour
Ebrahim, M. A., Zaiton, F., Elkamash, T. H., Clinical and ultrasound assessment in patients with placenta previa to predict the severity of intrapartum hemorrhage, <i>Egyptian Journal of Radiology and Nuclear Medicine</i> , 44, 657-663, 2013	Examines the predictors of major bleeding during caesarean section
Golditch, I. M., Boyce, N. E., Jr., Management of abruptio placentae, <i>JAMA</i> , 212, 288-93, 1970	Lack of clarity in reporting prevents assessment of whether the population is relevant
Grimes, W. H., Jr., Bartholomew, R. A., A comparison of intravenous oxytocin and ergonovine in the control of hemorrhage attending delivery, <i>Southern Medical Journal</i> , 41, 980-7, 1948	No relevant population. The study authors compare oxytocin and ergonovine used during the third stage of labour
Haynes, D. M., Managing third trimester bleeding, <i>Postgraduate Medicine</i> , 42, 319-26, 1967	Non-systematic literature review
Hnat, Michael D., Mercer, Brian M., Thurnau, Gary, Goldenberg, Robert, Thom, Elizabeth A., Meis, Paul J., Moawad, Atef H., Iams, Jay D., Van Dorsten, J. Peter, National Institute of Child, Health, Human Development Network of Maternal-Fetal Medicine, Units, Perinatal outcomes in women with preterm rupture of membranes between 24 and 32 weeks of gestation and a history of vaginal bleeding, <i>American Journal of Obstetrics and Gynecology</i> , 193, 164-8, 2005	No relevant comparison
Hogberg, U., Holmgren, P.A., Infant mortality of very preterm infants by mode of delivery, institutional policies and maternal diagnosis, <i>Acta Obstetrica et Gynecologica Scandinavica</i> , 86, 693-700, 2007	No relevant population. This article compares vaginal births and caesarean sections in cases of antepartum haemorrhage
Hurd, W. W., Miodovnik, M., Hertzberg, V., Lavin, J. P., Selective management of abruptio placentae: a prospective study, <i>Obstetrics and Gynecology</i> , 61, 467-73, 1983	No relevant population. Some diagnoses of abruptio placentae were done antenatally and some of these were followed by caesarean section. The study authors compare fetal mortality between vaginal births and caesarean sections, but they do not present separate outcome data relating to women with abruptio placentae in labour
Jakobsson, Maija, Gissler, Mika, Tapper, Anna-Maija, Risk factors for blood transfusion at delivery in Finland, <i>Acta Obstetrica et Gynecologica Scandinavica</i> , 92, 414-20, 2013	No relevant population
Lankoande, M., Bonkougou, P., Ouandaogo, S., Dayamba, M., Ouedraogo, A., Veyckmans, F., Ouedraogo, N., Incidence and outcome of severe antepartum hemorrhage at the Teaching Hospital Yalgado Ouedraogo in Burkina Faso, <i>BMC Emergency Medicine</i> , 17, 17, 2017	No relevant population. According to the definition in the study, "severe antepartum hemorrhage" includes both antepartum and intrapartum haemorrhage. However no subgroup analysis is performed for intrapartum haemorrhage



Study	Reason for exclusion
Ledger, W. J., Identification of the high risk mother and fetus--does it work?, Clinics in Perinatology, 7, 125-34, 1980	Non-systematic literature review
Lindquist, Anthea, Knight, Marian, Kurinczuk, Jennifer J., Variation in severe maternal morbidity according to socioeconomic position: a UK national case-control study, BMJ open, 3, 2013	No relevant comparison. This article focuses on maternal characteristics associated with the composite outcome "severe maternal morbidity". Therapies for major peripartum haemorrhage are part of the composite outcome
Magann, Everett F., Evans, Sharon, Hutchinson, Maureen, Collins, Robyn, Howard, Bobby C., Morrison, John C., Postpartum hemorrhage after vaginal birth: an analysis of risk factors, Southern Medical Journal, 98, 419-22, 2005	No relevant population or comparison. This article focuses on the association between postpartum haemorrhage and several risk factors, including intrapartum haemorrhage
Malinowska-Polubiec, Aneta, Romejko-Wolniewicz, Ewa, Zareba-Szczudlik, Julia, Dobrowolska-Redo, Agnieszka, Sotowska, Agnieszka, Smolarczyk, Roman, Wilczynski, Jan, Czajkowski, Krzysztof, Emergency peripartum hysterectomy - a challenge or an obstetrical defeat?, Neuro endocrinology letters, 37, 389-394, 2016	A full-text copy of the article could not be obtained
Mastrolia, Salvatore Andrea, Baumfeld, Yael, Loverro, Giuseppe, Yohai, David, Hershkovitz, Reli, Weintraub, Adi Yehuda, Placenta previa associated with severe bleeding leading to hospitalization and delivery: a retrospective population-based cohort study, The journal of maternal-fetal & neonatal medicine : the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians, 29, 3467-71, 2016	No relevant population or comparison. This study compares cases of placenta praevia with severe bleeding to cases of placenta praevia without severe bleeding. Bleeding seems to be antepartum based on keywords in the article but this is not completely clear from the text. No subgroup analysis of women with severe bleeding
Moir, D. D., Amoa, A. B., Ergometrine or oxytocin? Blood loss and side-effects at spontaneous vertex delivery, British Journal of Anaesthesia, 51, 113-117, 1979	No relevant population. This study is on a general population of primigravidae with spontaneous, single, vertex births in the dorsal position. Only 4 women lost more than 500 ml of blood
Moller, H. J., Fuchs, F., The prophylactic use of methergin in deliveries, Danish medical bulletin, 3, 47-51, 1956	No relevant population
Moodie, J. E., Moir, D. D., Ergometrine, oxytocin and extradural analgesia, British Journal of Anaesthesia, 48, 571-574, 1976	No relevant population. Only 24 out of 80 women lost more than 500 ml of blood; no subgroup analysis was made for these women and it is unclear if haemorrhage occurred intrapartum or postpartum
Nair, M., Kurinczuk, J. J., Brocklehurst, P., Sellers, S., Lewis, G., Knight, M., Factors associated with maternal death from direct pregnancy complications: a UK national case-control study, BJOG: An International Journal of Obstetrics & Gynaecology, 122, 653-62, 2015	No relevant population. No subgroup analysis for women with intrapartum haemorrhage. No relevant intervention

Study	Reason for exclusion
Nirmala,K., Zainuddin,A.A., Ghani,N.A.A., Zulkifli,S., Jamil,M.A., Carbetocin versus syntometrine in prevention of post-partum hemorrhage following vaginal delivery, <i>Journal of Obstetrics and Gynaecology Research</i> , 35, 48-54, 2009	No relevant population
Oueslati, D., Chelli, D., Peripartum haemorrhage: Value of surgical treatment, <i>International Journal of Gynecology and Obstetrics</i> , 119, S794-S795, 2012	Conference abstract
Parazzini, Fabio, Ricci, Elena, Cipriani, Sonia, Chiaffarino, Francesca, Bortolus, Renata, Chiantera, Vito, Bulfoni, Giuseppe, Temporal trends and determinants of peripartum hysterectomy in Lombardy, Northern Italy, 1996-2010, <i>Archives of Gynecology and Obstetrics</i> , 287, 223-8, 2013	No relevant population
Perkins,R.P., The neonatal significance of selected perinatal events among infants of low birth weight. II. The influence of ruptured membranes, <i>American Journal of Obstetrics and Gynecology</i> , 142, 7-16, 1982	No relevant population. No separate data for women with intrapartum haemorrhage
Reron, A., Jaworowski, A., Ossowski, P., Perinatal haemorrhages - Methods of management, <i>Ginekologia i Poloznictwo</i> , 13, 32-40, 2009	A full-text copy of the article could not be obtained
Riveros-Perez, E., Wood, C., Retrospective analysis of obstetric and anesthetic management of patients with placenta accreta spectrum disorders, <i>International Journal of Gynecology and Obstetrics</i> , 140, 370-374, 2018	A descriptive retrospective study in women with placenta accreta spectrum disorders. No relevant population, intervention, comparison, or outcome
Rocha Filho, Edilberto A., Costa, Maria L., Cecatti, Jose G., Parpinelli, Mary A., Haddad, Samira M., Sousa, Maria H., Melo, Elias F., Jr., Surita, Fernanda G., Souza, Joao P., Brazilian Network for Surveillance of Severe Maternal Morbidity Study, Group, Contribution of antepartum and intrapartum hemorrhage to the burden of maternal near miss and death in a national surveillance study, <i>Acta Obstetrica et Gynecologica Scandinavica</i> , 94, 50-8, 2015	Population is women with antepartum and intrapartum hemorrhage (not reported separately). No relevant intervention and comparison
Skye, D. V., Management of peripartum hemorrhage, <i>WMJ</i> , 97, 43-6, 1998	Narrative article on management of peripartum haemorrhage. No data or references on relevant interventions presented
Su, Lin Lin, Chong, Yap Seng, Massive obstetric haemorrhage with disseminated intravascular coagulopathy, <i>Best practice &amp; research. Clinical obstetrics &amp; gynaecology</i> , 26, 77-90, 2012	Narrative review on the management of massive obstetric haemorrhage (focus on antepartum and postpartum haemorrhage). Interventions relevant to the review protocol not mentioned
Tarcomnicu, I., Dimitriu, M. C. T., Pacu, I., Gheorghiu, D. C., Calin, D. F., Hardja, H., Vladescu, T., Banacu, M., Ciobanu, A., Popescu, I., Jitianu, R. C., Constantin, V. D., Popa, F., Paunica-Panea, G., Bacalbaaea, N., Ionescu, C. A., Obstetric haemorrhages, a reality in	Descriptive study on all obstetric haemorrhages in the study authors' hospital in Romania. No relevant data presented

Study	Reason for exclusion
spite of modern obstetrics!, Archives of the Balkan Medical Union, 50, 513-517, 2015	
Vergani, Patrizia, Ornaghi, Sara, Pozzi, Ilaria, Beretta, Pietro, Russo, Francesca Maria, Follesa, Ilaria, Ghidini, Alessandro, Placenta previa: distance to internal os and mode of delivery, American Journal of Obstetrics and Gynecology, 201, 266.e1-5, 2009	Population in this study is women with placenta praevia, not women with intrapartum bleeding. The study compares outcomes in 2 groups depending on the location of the placenta in relation to the internal orifice of the uterus. No relevant data
Walfish, M., Neuman, A., Wlody, D., Maternal haemorrhage, British Journal of Anaesthesia, 103 Suppl 1, i47-56, 2009	Narrative article on risk factors for and management of maternal haemorrhage focusing on antepartum and postpartum haemorrhage. No relevant data or references are presented
Weinstein, L., Farabow, W. S., Gusdon, J. P., Jr., Third stage of labor and transplacental hemorrhage, Obstetrics and Gynecology, 37, 90-3, 1971	Placental delivery and transplacental haemorrhage (during third stage of labour), thus, not relevant to this review
Wise, Arlene, Clark, Vicki, Challenges of major obstetric haemorrhage, Best practice & research. Clinical obstetrics & gynaecology, 24, 353-65, 2010	Narrative article on major obstetric haemorrhage, mainly focusing on postpartum haemorrhage. No relevant data or references presented
Wortman, Alison C., Twickler, Diane M., McIntire, Donald D., Dashe, Jodi S., Bleeding complications in pregnancies with low-lying placenta, The journal of maternal-fetal & neonatal medicine : the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians, 29, 1367-71, 2016	Study looking at mode of birth and incidence of postpartum haemorrhage in women with low-lying placenta. No relevant data presented

### Economic studies

- 2 See Supplement 2 (Health economics) for details of economic evidence reviews and health economic modelling.

## Appendix E – Clinical evidence tables

### Intrapartum care for women with intrapartum haemorrhage – management of intrapartum haemorrhage

- 7 No clinical evidence was identified for this review and so there are no evidence tables.

## Appendix F – Forest plots

### Intrapartum care for women with intrapartum haemorrhage – management of intrapartum haemorrhage

- 11 No meta-analysis was undertaken for this review and so there are no forest plots.

## **Appendix G – GRADE tables**

### **Intrapartum care for women with intrapartum haemorrhage – management of 3 intrapartum haemorrhage**

4 No clinical evidence was identified for this review and so there are no GRADE tables.

## **Appendix H – Economic evidence study selection**

### **Intrapartum care for women with intrapartum haemorrhage – management of 7 intrapartum haemorrhage**

8 See Supplement 2 (Health economics) for details of economic evidence reviews and health  
9 economic modelling.

## **Appendix I – Economic evidence tables**

### **Intrapartum care for women with intrapartum haemorrhage – management of 12 intrapartum haemorrhage**

13 See Supplement 2 (Health economics) for details of economic evidence reviews and health  
14 economic modelling.

## **Appendix J – Health economic evidence profiles**

### **Intrapartum care for women with intrapartum haemorrhage – management of 17 intrapartum haemorrhage**

18 See Supplement 2 (Health economics) for details of economic evidence reviews and health  
19 economic modelling.

## **Appendix K – Health economic analysis**

### **Intrapartum care for women with intrapartum haemorrhage – management of 22 intrapartum haemorrhage**

23 See Supplement 2 (Health economics) for details of economic evidence reviews and health  
24 economic modelling.

## **Appendix L – Research recommendations**

### **Intrapartum care for women with intrapartum haemorrhage – management of 27 intrapartum haemorrhage**

28 No research recommendations were made for this review.