

Confidential Audit of Severe Maternal Morbidity (SMM) in Ireland



NATIONAL PERINATAL
EPIDEMIOLOGY CENTRE **2022**

INFORMATION FOR THOSE COMPLETING THIS FORM

The National Perinatal Epidemiology Centre (NPEC) is sincerely grateful for your contribution to this audit. If you have questions or difficulties regarding any aspect of the form, please do not hesitate to contact the NPEC team by telephone: **021 4205042** or by email: **e.manning@ucc.ie**

In this audit, a case of severe maternal morbidity (SMM) is defined as a pregnant or recently-pregnant woman (i.e. up to 42 days following the pregnancy end).

Please return completed forms to:

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Project Manager
National Perinatal Epidemiology Centre
Department of Obstetrics and Gynaecology
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Wilton
Cork

Hospital Name: _____

Completed by: _____

(Please print name and staff grade)

1. SMM - Woman's details	
Date of clinical event (day-month-year)	
Time of onset of clinical event (hour-minute)	
Woman's age	
Was this woman a private or public patient?	<input type="checkbox"/> Private <input type="checkbox"/> Public
Parity: number of births (alive or stillborn with a gestational age of 24 weeks or more)	
Parity: number of pregnancy losses (less than 24 weeks of gestation)	
Height at booking in meters (e.g. 1.8 meters)	
Weight at booking in kilograms	
BMI	
If height and/or weight was missing, but BMI was provided, please enter the value here	
Date of delivery (day-month-year)	Hospital of delivery
Gestation at delivery/pregnancy ends in completed weeks	
Ethnic group	<input type="checkbox"/> White Irish <input type="checkbox"/> Irish Traveller <input type="checkbox"/> Any other White background <input type="checkbox"/> Asian or Asian Irish <input type="checkbox"/> Black or Black Irish <input type="checkbox"/> Other, including mixed ethnic backgrounds* <input type="checkbox"/> Not recorded
Please specify country of origin if "Any other White background" or "other, including mixed ethnic backgrounds" was selected in the previous question	
Was the care of this woman transferred FROM another hospital?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If yes, please indicate timing of transfer in relation to pregnancy status	<input type="checkbox"/> Woman transferred with fetus in-uteru <input type="checkbox"/> Woman transferred following delivery of baby
Name of referring maternity unit	
Was the care of this woman transferred TO another hospital?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If yes, please indicate timing of transfer in relation to pregnancy status	<input type="checkbox"/> Woman transferred with fetus in-uteru <input type="checkbox"/> Woman transferred following delivery of baby
Name of maternity unit where the woman was transferred to	
Did the woman smoke at booking?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not recorded
If yes, please specify quantity	<input type="checkbox"/> Not recorded
Did she give up smoking during pregnancy?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not recorded
Did the woman drink alcohol at booking?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not recorded
Is there documented history of drug abuse or attendance at a drug rehabilitation unit?	<input type="checkbox"/> None recorded <input type="checkbox"/> Prior to this pregnancy <input type="checkbox"/> During this pregnancy

2. SMM - Obstetric history/current pregnancy and neonatal outcome

Did the woman have a previous caesarean section?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not recorded
Was this pregnancy the result of infertility treatment?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not recorded
If yes, please specify method of fertility treatment	
Number of fetuses/babies in this delivery (Please select all that apply)	<input type="checkbox"/> One <input type="checkbox"/> Two <input type="checkbox"/> Three <input type="checkbox"/> More than three
Please specify number of fetuses if there were more than 3 fetuses/babies	
Fetus/baby 1	
(Please indicate whether an early pregnancy loss or termination of pregnancy occurred for baby 1)	<input type="checkbox"/> Early pregnancy loss <input type="checkbox"/> Not applicable <input type="checkbox"/> Termination of pregnancy
Please specify the type of early pregnancy loss If early pregnancy loss please go to section 3 (SMM - Location of level of care)	<input type="checkbox"/> Miscarriage (Early pregnancy loss with less than 13 weeks of gestation) <input type="checkbox"/> Ectopic pregnancy
Fetus/baby 2	
(Please indicate whether an early pregnancy loss or termination of pregnancy occurred for baby 2)	<input type="checkbox"/> Early pregnancy loss <input type="checkbox"/> Not applicable <input type="checkbox"/> Termination of pregnancy
Please specify the type of early pregnancy loss	<input type="checkbox"/> Miscarriage (Early pregnancy loss with less than 13 weeks of gestation) <input type="checkbox"/> Ectopic pregnancy
Fetus/baby 3	
(Please indicate whether an early pregnancy loss or termination of pregnancy occurred for baby 3)	<input type="checkbox"/> Early pregnancy loss <input type="checkbox"/> Not applicable <input type="checkbox"/> Termination of pregnancy
Please specify the type of early pregnancy loss	<input type="checkbox"/> Miscarriage (Early pregnancy loss with less than 13 weeks of gestation) <input type="checkbox"/> Ectopic pregnancy
Fetus/baby More than 3	
(Please indicate whether an early pregnancy loss or termination of pregnancy occurred for baby More than 3)	<input type="checkbox"/> Early pregnancy loss <input type="checkbox"/> Termination of pregnancy
Please specify the type of early pregnancy loss	<input type="checkbox"/> Miscarriage (Early pregnancy loss with less than 13 weeks of gestation) <input type="checkbox"/> Ectopic pregnancy
Delivery details	
Onset of labour	<input type="checkbox"/> Spontaneous <input type="checkbox"/> Induced <input type="checkbox"/> Never in labour
Lie of fetus at delivery	<input type="checkbox"/> Longitudinal <input type="checkbox"/> Oblique <input type="checkbox"/> Transverse
Presentation at delivery	<input type="checkbox"/> Cephalic <input type="checkbox"/> Breech <input type="checkbox"/> Other
Mode of delivery baby 1	<input type="checkbox"/> Spontaneous vaginal delivery <input type="checkbox"/> Assisted vaginal breech delivery <input type="checkbox"/> Ventouse vaginal delivery <input type="checkbox"/> Non-rotational forceps vaginal delivery <input type="checkbox"/> Rotational forceps vaginal delivery <input type="checkbox"/> Elective LSCS <input type="checkbox"/> Emergency LSCS <input type="checkbox"/> Classical Caesarean Section
Mode of delivery baby 2	<input type="checkbox"/> Spontaneous vaginal delivery <input type="checkbox"/> Assisted vaginal breech delivery <input type="checkbox"/> Ventouse vaginal delivery <input type="checkbox"/> Non-rotational forceps vaginal delivery <input type="checkbox"/> Rotational forceps vaginal delivery <input type="checkbox"/> Elective LSCS <input type="checkbox"/> Emergency LSCS <input type="checkbox"/> Classical Caesarean Section
Mode of delivery baby 3	<input type="checkbox"/> Spontaneous vaginal delivery <input type="checkbox"/> Assisted vaginal breech delivery <input type="checkbox"/> Ventouse vaginal delivery <input type="checkbox"/> Non-rotational forceps vaginal delivery <input type="checkbox"/> Rotational forceps vaginal delivery <input type="checkbox"/> Elective LSCS <input type="checkbox"/> Emergency LSCS <input type="checkbox"/> Classical Caesarean Section

Neonatal Outcomes – Baby 1	
Birth weight in grams	
Intubation following delivery	<input type="checkbox"/> Yes <input type="checkbox"/> No
Transferred to SBCU/NICU	<input type="checkbox"/> Yes <input type="checkbox"/> No
Neonatal outcome	<input type="checkbox"/> Live born (baby born with evidence of life such as breathing movements, presence of a heart beat, pulsation of the cord or definite movement of voluntary muscles) <input type="checkbox"/> Late miscarriage (between 13 weeks and up to 24 weeks of gestation) <input type="checkbox"/> Stillbirth (a baby delivered without signs of life from 24 weeks' gestation and/or with a birth weight of more or equal 500 gramme) <input type="checkbox"/> Early neonatal death (death of a live born baby occurring before 7 completed days after birth) <input type="checkbox"/> Late neonatal death (death of a live born occurring from the 7th day and before 28 completed days after birth)
Neonatal Outcomes – Baby 2	
Birth weight in grams	
Intubation following delivery	<input type="checkbox"/> Yes <input type="checkbox"/> No
Transferred to SBCU/NICU	<input type="checkbox"/> Yes <input type="checkbox"/> No
Neonatal outcome	<input type="checkbox"/> Live born (baby born with evidence of life such as breathing movements, presence of a heart beat, pulsation of the cord or definite movement of voluntary muscles) <input type="checkbox"/> Late miscarriage (between 13 weeks and up to 24 weeks of gestation) <input type="checkbox"/> Stillbirth (a baby delivered without signs of life from 24 weeks' gestation and/or with a birth weight of more or equal 500 gramme) <input type="checkbox"/> Early neonatal death (death of a live born baby occurring before 7 completed days after birth) <input type="checkbox"/> Late neonatal death (death of a live born occurring from the 7th day and before 28 completed days after birth)
Neonatal Outcomes – Baby 3	
Birth weight in grams	
Intubation following delivery	<input type="checkbox"/> Yes <input type="checkbox"/> No
Transferred to SBCU/NICU	<input type="checkbox"/> Yes <input type="checkbox"/> No
Neonatal outcome	<input type="checkbox"/> Live born (baby born with evidence of life such as breathing movements, presence of a heart beat, pulsation of the cord or definite movement of voluntary muscles) <input type="checkbox"/> Late miscarriage (between 13 weeks and up to 24 weeks of gestation) <input type="checkbox"/> Stillbirth (a baby delivered without signs of life from 24 weeks' gestation and/or with a birth weight of more or equal 500 gramme) <input type="checkbox"/> Early neonatal death (death of a live born baby occurring before 7 completed days after birth) <input type="checkbox"/> Late neonatal death (death of a live born occurring from the 7th day and before 28 completed days after birth)

What was the antenatal care pathway assigned to this woman prior to the SMM event?	<input type="checkbox"/> supported Care Pathway; Midwifery led and delivered care <input type="checkbox"/> Assisted Care Pathway; Obstetric led, Midwifery and Obstetric delivered care <input type="checkbox"/> Specialised Care Pathway; Obstetric led, Obstetric and Midwifery delivered care <input type="checkbox"/> Not documented
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3. SMM - Location and level of care

Please tick all that apply	<input type="checkbox"/> On the ward <input type="checkbox"/> Delivery Suite <input type="checkbox"/> Theatre <input type="checkbox"/> High Dependency Unit <input type="checkbox"/> ICU/CCU
Please indicate the HIGHEST level of care required during the clinical event	<input type="checkbox"/> Level 0: Normal ward care <input type="checkbox"/> Level 1: Additional monitoring or intervention, or step down from higher level of care <input type="checkbox"/> Level 2: Single Organ Support <input type="checkbox"/> Level 3: Advanced respiratory support alone, or support of two or more organ systems

Definitions of level of care are defined in Appendix 1

4. SMM - Maternal Morbidity Category

(Definitions of morbidities are defined in Appendix 2. Please tick all that apply)

Major obstetric haemorrhage (MOH)	
Please specify the criteria met for the MOH in the questions below. More than 1 can apply. Please complete the next section in relation to MOH	
Estimated Blood Loss >= 2500 mls	<input type="checkbox"/> Yes <input type="checkbox"/> No
Transfused with more or equal 5 units of blood	<input type="checkbox"/> Yes <input type="checkbox"/> No
If MOH, did the woman received treatment for coagulopathy?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Uterine Rupture	<input type="checkbox"/> Yes <input type="checkbox"/> No
Peripartum hysterectomy (PH) <input type="checkbox"/> Yes <input type="checkbox"/> No Was this a planned elective PH surgery? <input type="checkbox"/> Yes <input type="checkbox"/> No Place of surgery	
Please specify indication for PH in the text box below	
Eclampsia	<input type="checkbox"/> Yes <input type="checkbox"/> No
Renal or liver dysfunction	<input type="checkbox"/> Yes <input type="checkbox"/> No
Pulmonary Oedema	<input type="checkbox"/> Yes <input type="checkbox"/> No
Acute respiratory dysfunction	<input type="checkbox"/> Yes <input type="checkbox"/> No
Pulmonary Embolism	<input type="checkbox"/> Yes <input type="checkbox"/> No
Cardiac arrest	<input type="checkbox"/> Yes <input type="checkbox"/> No
Coma	<input type="checkbox"/> Yes <input type="checkbox"/> No
Cerebro-vascular event	<input type="checkbox"/> Yes <input type="checkbox"/> No
Status epilepticus	<input type="checkbox"/> Yes <input type="checkbox"/> No
Septicaemic shock	<input type="checkbox"/> Yes <input type="checkbox"/> No
Anaesthetic problem	<input type="checkbox"/> Yes <input type="checkbox"/> No
ICU/CCU admission	<input type="checkbox"/> Yes <input type="checkbox"/> No
Please ensure this information matches the information selected in the location of care	
Please specify indication for admission	
Please specify the duration of ICU care in days/part days (e.g. 1.5 days)	
Other severe maternal morbidity (SMM)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Please specify other SMM	
Interventional Radiology (IR) Please select all that apply	<input type="checkbox"/> Unplanned IR <input type="checkbox"/> Planned IR
Please use this space to enter any additional relevant information	

Appendix 2: Maternal Morbidity Definitions

1: Major Obstetric Haemorrhage (MOH)	Estimated blood loss \geq 2500ml and/or transfused 5 or more units of blood. Also includes ectopic pregnancy, miscarriage and Termination of Pregnancy (TOP) meeting these criteria. (Please record as well whether treatment for coagulopathy was received).
2: Uterine rupture	A complete separation of the wall of the pregnant uterus, with or without expulsion of the fetus, involving rupture of membranes at the site of the uterine rupture or extension into uterine muscle separate from any previous scar, and endangering the life of the mother or fetus. Excluded: any asymptomatic palpable or visualised defect (e.g. dehiscence noted incidentally at caesarean delivery)
3: Peripartum hysterectomy	Peripartum hysterectomy
4: Eclampsia	Seizure associated with antepartum, intrapartum or postpartum symptoms and signs of pre-eclampsia
5: Renal or liver dysfunction	Acute onset of biochemical disturbance, urea >15 mmol/l, creatinine >400 mmol/l, AST/ALT >200 u/l
6: Pulmonary oedema	Clinically diagnosed pulmonary oedema associated with acute breathlessness and O ₂ saturation $<95\%$, requiring O ₂ , diuretics or ventilation
7: Acute respiratory dysfunction	Requiring intubation or ventilation for >60 minutes (not including duration of general anaesthetic)
8: Pulmonary embolism	Increased respiratory rate (>20 /min), tachycardia, hypotension. Diagnosed as "high" probability on V/Q scan or positive spiral chest CT scan. Treated by heparin, thrombolysis or embolectomy
9: Cardiac arrest	No detectable major pulse
10: Coma	Including diabetic coma. Unconscious for >12 hours
11: Cerebro-vascular event	Stroke, cerebral/cerebellar haemorrhage or infarction, subarachnoid haemorrhage, dural venous sinus thrombosis
12: Status epilepticus	Constant or near constant state of having seizures that last 30mins or more
13: Septicaemic shock	Sepsis induced tissue hypoperfusion or hypotension persisting after resuscitation with 30mls/kg intravenous isotonic crystalloid fluid as evidenced by: <ul style="list-style-type: none"> • Systolic blood pressure < 90 mmHg or MAP < 65 mmHg • Decrease in systolic blood pressure by 40mmHg from baseline and/or • Lactate > 4 mmol/l.
14: Anesthetic problem	Aspiration, failed intubation, high spinal or epidural anaesthetic
15: ICU/CCU admission	Unit equipped to ventilate adults. Admission for one of the above problems or for any other reason. Includes CCU admissions
16: Other severe morbidity	Other severe morbidity, e.g. amniotic fluid embolism
17: Interventional Radiology	Received planned: <ul style="list-style-type: none"> • (a) or unplanned • (b) interventional radiology

Major Obstetric Haemorrhage Case Assessment Form 2022

5. MOH - Women's information

Date of event for MOH (day-month-year)	
Time of onset of event (24 hour clock) (hour-minute)	
Gestation at pregnancy end (completed weeks)	
Time of onset of haemorrhage	<input type="checkbox"/> Early pregnancy <20 wks <input type="checkbox"/> Antepartum <input type="checkbox"/> Intra-partum <input type="checkbox"/> Post-partum

6. MOH - Labour and delivery

If induction of labour was selected in SMM audit, please specify the mode of induction (Please tick all that applies)	<input type="checkbox"/> Prostin <input type="checkbox"/> Artificial Rupture of the Membrane (ARM) <input type="checkbox"/> Syntocinon <input type="checkbox"/> Propess <input type="checkbox"/> Other <input type="checkbox"/> Not recorded
Please specify other type of drug for induction of labour	
If sponateous onset of labour was selected in the SMM audit Please indicate if labour was augmented/accelerated	<input type="checkbox"/> Yes <input type="checkbox"/> No
Please specify method of augmentation/acceleration:	<input type="checkbox"/> ARM to augment labour <input type="checkbox"/> Syntocinon to augment labour
If Caesarean Section was reported in the SMM audit. Please specify indication for caesarean section	
Please specify the number of PREVIOUS caesarean sections	
Please specify the grade of Obstetrician(s) performing the Caesarean Section	<input type="checkbox"/> Obstetric Registrar Post <input type="checkbox"/> Doctor in training <input type="checkbox"/> Consultant <input type="checkbox"/> Other
If other, please specify	
If Emergency Caesarean Section was reported in the SMM audit. Was emergency c-section performed at full dilatation?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Was a consultant present?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the patient have a normal ultrasound for placental site?	<input type="checkbox"/> Yes <input type="checkbox"/> No

7. MOH - Blood Loss

Estimated Blood Loss in mls		
Haemoglobin level PRIOR to event (gm/dl)		
Date and time of haemoglobin level PRIOR to event (day-month-year) (hour-minute)		
Haemoglobin level AFTER management of event (gm/dl)		
Date and time of haemoglobin level AFTER management of event (day-month-year) (hour-minute)		
Location at onset of haemorrhage	<input type="checkbox"/> Obstetric-led unit <input type="checkbox"/> Alongside-Midwife-led unit <input type="checkbox"/> At home c/o self-employed midwife <input type="checkbox"/> At home c/o hospital Early Transfer Home Services/DOMINO scheme <input type="checkbox"/> In transport (ambulance) <input type="checkbox"/> At home/outwith hospital <input type="checkbox"/> Other	
If other, please specify		
Primary Cause of haemorrhage (Tick only one box)	Other Cause of haemorrhage (Tick all appropriate boxes)	
<input type="checkbox"/> Abruptio <input type="checkbox"/> Retained placenta/membranes <input type="checkbox"/> Uterine rupture <input type="checkbox"/> Bleeding from uterine incision <input type="checkbox"/> Placenta praevia <input type="checkbox"/> Vaginal laceration/haematoma <input type="checkbox"/> Uterine inversion <input type="checkbox"/> Morbidly adherent placenta (placenta accrete or per accreta) <input type="checkbox"/> Uterine atony <input type="checkbox"/> Cervical laceration <input type="checkbox"/> Broad ligament haematoma <input type="checkbox"/> Other	<input type="checkbox"/> Abruptio <input type="checkbox"/> Retained placenta/membranes <input type="checkbox"/> Uterine rupture <input type="checkbox"/> Bleeding from uterine incision <input type="checkbox"/> Placenta praevia <input type="checkbox"/> Vaginal laceration/haematoma <input type="checkbox"/> Uterine inversion <input type="checkbox"/> Morbidly adherent placenta (placenta accrete or per accreta) <input type="checkbox"/> Uterine atony <input type="checkbox"/> Cervical laceration <input type="checkbox"/> Broad ligament haematoma <input type="checkbox"/> Other _____	<input type="checkbox"/> No other causes of MOH
If other, please specify		

8. MOH - Estimating Blood Loss (EBL)

Please indicate where the estimation of blood loss took place?

Labour ward Theatre Other

Please specify other location of MOH

Labour ward

Please indicate the technique used to measure blood loss in the labour ward. (if a mixture of estimations and weighing methods to assess the amount of blood lost was used, please tick both options)

Visual estimation of blood loss (EBL)
 Direct quantitative measurement of blood loss using volume and weight assessment tools

For this case in the labour ward, was a visual Aide Memoire for EBL available within the delivery suite?

Yes No

If quantitative methods were used, please tick all methods used

Please specify other types of measurements:

Sanitary Pad
 Gauze Swabs
 Tampon or similar
 Inco sheet or similar
 Under buttocks sheets
 25x25 Swabs
 Kidney Dish
 Measurement of floor spills
 Other type of measurement

Theatre

Please indicate the technique used to measure blood loss in the theatre. (if the EBL was measured both techniques, combined, please tick both options)

Visual estimation of blood loss (EBL)
 Direct quantitative measurement of blood loss using volume and weight assessment tools

For this case in theatre, was a visual Aide Memoire for EBL available within the delivery suite?

Yes No

If quantitative methods were used, please tick all methods used

Please specify other types of measurements:

Sanitary Pad
 Gauze Swabs
 Tampon or similar
 Inco sheet or similar
 Under buttocks sheets
 25x25 Swabs
 Kidney Dish
 Measurement of floor spills
 Other type of measurement

Other Location

Please indicate the technique used to measure blood loss in other location. (if the EBL was measured both techniques, combined, please tick both options)

Visual estimation of blood loss (EBL)
 Direct quantitative measurement of blood loss using volume and weight assessment tools

For this case in other location, was a visual Aide Memoire for EBL available within the delivery suite?

Yes No

If quantitative methods were used, please tick all methods used

Please specify other types of measurements:

Sanitary Pad
 Gauze Swabs
 Tampon or similar
 Inco sheet or similar
 Under buttocks sheets
 25x25 Swabs
 Kidney Dish
 Measurement of floor spills
 Other type of measurement

Was the information on blood loss easy to extract from the charts?

Applicable for all three locations

Excellent: filed in clear sequence, easy to extract data
 Good: mainly clear, but some features absent
 Fair: significant deficiencies in filing
 Poor: chaotic notes, difficult to find much information

9. MOH - Prophylaxis

Was 3rd stage haemorrhage prophylaxis received?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If not received, why not?	<input type="checkbox"/> Not offered <input type="checkbox"/> Refused by patient <input type="checkbox"/> Other (specify)
What prophylaxis agent/dosage was given?	
Oxytocin/Syntocin (5-10 units IM/IV injection)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Oxytocin. (Please provide order drug was given)	<input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> Fourth <input type="checkbox"/> Fifth
(Oxytocin) (day-month-year) (hour-minute)	Date: _____ Time: _____
Ergometrine (0.5mg IM/IV injection)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Ergometrine. (Please provide order drug was given)	<input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> Fourth <input type="checkbox"/> Fifth
(Ergometrine) (day-month-year) (hour-minute)	Date: _____ Time: _____
Prostaglandin E1 (Misoprostol)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Misoprostol. (Please provide order drug was given)	<input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> Fourth <input type="checkbox"/> Fifth
(Misoprostol) (day-month-year) (hour-minute)	Date: _____ Time: _____
Route 1st dose	<input type="checkbox"/> Oral <input type="checkbox"/> Sublingual <input type="checkbox"/> Vaginal <input type="checkbox"/> Rectal
Syntometrine (5mg)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Syntometrine. (Please provide order drug was given)	<input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> Fourth <input type="checkbox"/> Fifth
(Syntometrine) (day-month-year) (hour-minute)	Date: _____ Time: _____
Syntocinon infusion (40 units)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Syntocinon. (Please provide order drug was given)	<input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> Fourth <input type="checkbox"/> Fifth
(Syntocinon) (day-month-year) (hour-minute)	Date: _____ Time: _____
Other type of drug	<input type="checkbox"/> Yes <input type="checkbox"/> No
If other, please specify the name of the drug	
Other type of drug. (Please provide order drug was given)	<input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> Fourth <input type="checkbox"/> Fifth

10. MOH - Risk of haemorrhage and planning for delivery

Previous Pregnancies

Did the patient have a previous PPH (Post Partum Haemorrhage)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the patient experience placenta praevia in the past?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the patient experience placenta accreta in the past?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Current Pregnancy

Was this a known case of placenta praevia?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Was this a suspected case of placenta accreta?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the patient have any other risk factors for PPH? (e.g. multiple pregnancy)	<input type="checkbox"/> Yes <input type="checkbox"/> No
If yes, please specify high risk factors	
Was an action plan recorded?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If yes, was this action plan followed?	<input type="checkbox"/> Completely <input type="checkbox"/> Partially <input type="checkbox"/> No <input type="checkbox"/> Unknown
Was an elective Caesarean section planned for one of these reasons?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Was a consultant obstetrician present at the caesarean section for these reasons?	<input type="checkbox"/> Yes <input type="checkbox"/> No

11. MOH - Communication	
Please indicate what specialist was involved in this case?	
Obstetric Consultant	<input type="checkbox"/> Yes <input type="checkbox"/> No
Communication - Obstetric Consultant	<input type="checkbox"/> Present <input type="checkbox"/> Informed (present in hospital) <input type="checkbox"/> Informed (not present)
Obstetric Registrar	<input type="checkbox"/> Yes <input type="checkbox"/> No
Communication - Obstetric Registrar	<input type="checkbox"/> Present <input type="checkbox"/> Informed (present in hospital) <input type="checkbox"/> Informed (not present)
Senior Midwife	<input type="checkbox"/> Yes <input type="checkbox"/> No
Communication - Senior Midwife	<input type="checkbox"/> Present <input type="checkbox"/> Informed (present in hospital) <input type="checkbox"/> Informed (not present)
Anaesthetic Registrar	<input type="checkbox"/> Yes <input type="checkbox"/> No
Communication - Anaesthetic Registrar	<input type="checkbox"/> Present <input type="checkbox"/> Informed (present in hospital) <input type="checkbox"/> Informed (not present)
Anaesthetic Consultant	<input type="checkbox"/> Yes <input type="checkbox"/> No
Communication - Anaesthetic Consultant	<input type="checkbox"/> Present <input type="checkbox"/> Informed (present in hospital) <input type="checkbox"/> Informed (not present)
Haematologist	<input type="checkbox"/> Yes <input type="checkbox"/> No
Communication - Haematologist	<input type="checkbox"/> Present <input type="checkbox"/> Informed (present in hospital) <input type="checkbox"/> Informed (not present)
Theatre Staff	<input type="checkbox"/> Yes <input type="checkbox"/> No
Communication - Theatre Staff	<input type="checkbox"/> Present <input type="checkbox"/> Informed (present in hospital) <input type="checkbox"/> Informed (not present)
Laboratory technician on call	<input type="checkbox"/> Yes <input type="checkbox"/> No
Communication - Laboratory technician on call	<input type="checkbox"/> Present <input type="checkbox"/> Informed (present in hospital) <input type="checkbox"/> Informed (not present)
Other health professional	<input type="checkbox"/> Yes <input type="checkbox"/> No
Please specify other type of health professional	
Communication - Other health professional	<input type="checkbox"/> Present <input type="checkbox"/> Informed (present in hospital) <input type="checkbox"/> Informed (not present)

12. MOH - Resuscitation	
Please tick all the methods used for resuscitation	<input type="checkbox"/> Venous access PRIOR the event <input type="checkbox"/> Venous access DURING the event <input type="checkbox"/> 2 large venous cannulae sited <input type="checkbox"/> Oxygen given

13. MOH - Fluid resuscitation	
(excluding fluid loading for anaesthetic)	
How much crystalloid (eg Hartmann's) was given prior to commencing blood transfusion?	MLS
How much colloid (eg gelofusine) was given prior to blood transfusion?	MLS

14. MOH - Blood products	
Did the patient receive a blood transfusion?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If not transfused, did the patient refuse a blood transfusion?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Blood products	<input type="checkbox"/> "Emergency" O negative blood <input type="checkbox"/> Group specific uncross-matched blood <input type="checkbox"/> Cross-matched blood
"Emergency" O negative blood	
Total number of units ("Emergency" O negative blood)	
Start Time - Emergency O negative blood (hour-minute)	
Uncross matched blood	
Total number of units (Uncross matched blood)	
Start Time - Uncross matched blood (hour-minute)	
Cross matched blood	
Total number of units (cross matched blood)	
Start Time - cross matched blood :(hour-minute)	
Other blood products transfused	<input type="checkbox"/> Fresh Frozen Plasma (FFP) <input type="checkbox"/> Fibrinogen Concentrate <input type="checkbox"/> Platelets <input type="checkbox"/> Octoplas <input type="checkbox"/> Activated Factor VII <input type="checkbox"/> Other
Was there a delay in accessing blood?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If known, how long a delay was there?	
Fresh Frozen Plasma (Total number of units)	
Fibrinogen Concentrate (Total number of units)	
Platelets (Total number of units)	
Octoplas (Total number of units)	
Activated Factor VII (Total number of units)	
Other type of blood product Please specify the name for the other type of blood product	
Units (Other type of blood product)	
Was blood cell salvage attempted?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If yes, how much blood was salvaged? (in mls)	
If cell salvage was not used, why not?	<input type="checkbox"/> Not appropriate (e.g. no laparotomy) <input type="checkbox"/> Equipment not available <input type="checkbox"/> Equipment not working <input type="checkbox"/> No staff with appropriate experience <input type="checkbox"/> Other (please specify below)
Please specify other reasons why cell salvage was not used	
Was special equipment used to provide warm, rapid transfusion of IV fluids (including blood)?	<input type="checkbox"/> Yes <input type="checkbox"/> No

15. MOH - Blood tests	
Was a full blood count taken DURING MOH event or resuscitation?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Was a clotting screen (e.g. PT, PTTT, thrombin time, fibrinogen, fibrin degradation products) taken prior to transfusion (or during haemorrhage if no transfusion)?	<input type="checkbox"/> Yes <input type="checkbox"/> No

16. MOH - Monitoring

Please indicate what was used for monitoring

(Please tick all that apply)

- Obstetric early warning chart used
- BP monitored frequently (at least every 15 minutes)
- Pulse monitored frequently (at least every 15 minutes)
- Pulse oximeter used
- Foley catheter in situ
- Urine output measured regularly
- Central venous pressure line inserted
- Arterial line inserted
- Other

If other, please specify

17. MOH - Stop the bleeding

Oxytocin/Syntocin (5-10 units IM/IV injection)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Oxytocin. (Please provide order drug was given)	<input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> Fourth <input type="checkbox"/> Fifth
(Oxytocin) (day-month-year) (hour-minute)	Date: _____ Time: _____
Ergometrine (0.5mg IM/IV injection)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Ergometrine. (Please provide order drug was given)	<input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> Fourth <input type="checkbox"/> Fifth
(Ergometrine) (day-month-year) (hour-minute)	Date: _____ Time: _____
Prostaglandin E1 (Misoprostol)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Misoprostol. (Please provide order drug was given)	<input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> Fourth <input type="checkbox"/> Fifth
(Misoprostol) (day-month-year) (hour-minute)	Date: _____ Time: _____
Route 1st dose	<input type="checkbox"/> Oral <input type="checkbox"/> Sublingual <input type="checkbox"/> Vaginal <input type="checkbox"/> Rectal
Syntometrine (5mg)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Syntometrine. (Please provide order drug was given)	<input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> Fourth <input type="checkbox"/> Fifth
(Syntometrine) (day-month-year) (hour-minute)	Date: _____ Time: _____
Syntocinon infusion (40 units)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Syntocinon. (Please provide order drug was given)	<input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> Fourth <input type="checkbox"/> Fifth
(Syntocinon) (day-month-year) (hour-minute)	Date: _____ Time: _____
Tranexamic Acid (1gram)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Tranexamic. (Please provide order drug was given)	<input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> Fourth <input type="checkbox"/> Fifth
1st dose (Tranexamic) (day-month-year) (hour-minute)	Date: _____ Time: _____
Prostaglandin F2-alpha (Carboprost/Haemabate)	
Carboprost. (Please provide order drug was given)	<input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> Fourth <input type="checkbox"/> Fifth
1st dose (Carboprost) (day-month-year) (hour-minute)	Date: _____ Time: _____
Route 1st dose	<input type="checkbox"/> Oral <input type="checkbox"/> Sublingual <input type="checkbox"/> Vaginal <input type="checkbox"/> Rectal
Other type of drug	<input type="checkbox"/> Yes <input type="checkbox"/> No
If other, please specify the name of the drug	
Other type of drug. (Please provide order drug was given)	<input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> Fourth <input type="checkbox"/> Fifth
1st dose (Carboprost) (day-month-year) (hour-minute)	Date: _____ Time: _____
Route 1st dose	<input type="checkbox"/> Oral <input type="checkbox"/> Sublingual <input type="checkbox"/> Vaginal <input type="checkbox"/> Rectal
Dose - other - 1st dose	

18. MOH - Manual steps to stop the bleeding

Manual steps to stop bleeding.

(Please tick all that apply)

- Rubbing up of the Uterus
- Bi Manual Uterine Compression
- Other manual procedures

Please specify Other manual procedures

Rubbing up of the Uterus. Time (hour-minute)

Bi Manual Uterine Compression. Time (hour-minute)

EBL at procedure

MLS

Other manual procedures. Time (hour-minute)

19. Surgical procedure/s used to stop the bleeding

Surgical procedures
(Please tick all that apply)

- Manual Evacuation of Placenta
- Repair of Cervical/Vaginal lacerations
- Intra-uterine balloon tamponade
- Laparotomy
- Bilateral ligation of uterine arteries
- Bilateral ligation of internal iliac arteries
- Haemostatic brace uterine suturing (eg B-Lynch)
- Re-suturing of C section uterine incision and/or suturing of lateral extension
- Hysterectomy
- Other type of surgical procedure

Manual Evacuation of Placenta

Please provide order that procedure was carried out or provide the time procedure was carried out First Second Third Fourth Fifth

Time (hour-minute) EBL at procedure MLS

Cervical/Vaginal lacerations

Please provide order that procedure was carried out or provide the time procedure was carried out First Second Third Fourth Fifth

Time (hour-minute) EBL at procedure MLS

Intra-uterine balloon tamponade

Please provide order that procedure was carried out or provide the time procedure was carried out First Second Third Fourth Fifth

Time (hour-minute) EBL at procedure MLS

Laparotomy

Please provide order that procedure was carried out or provide the time procedure was carried out First Second Third Fourth Fifth

Time (hour-minute) EBL at procedure MLS

Bilateral ligation of uterine arteries

Please provide order that procedure was carried out or provide the time procedure was carried out First Second Third Fourth Fifth

Time (hour-minute) EBL at procedure MLS

Bilateral ligation of internal iliac arteries

Please provide order that procedure was carried out or provide the time procedure was carried out First Second Third Fourth Fifth

Time (hour-minute) EBL at procedure MLS

Haemostatic brace uterine suturing (eg B-Lynch)

Please provide order that procedure was carried out or provide the time procedure was carried out First Second Third Fourth Fifth

Time (hour-minute) EBL at procedure MLS

Re-suturing of C section uterine incision and/or suturing of lateral extension

Please provide order that procedure was carried out or provide the time procedure was carried out First Second Third Fourth Fifth

Time (hour-minute) EBL at procedure MLS

Hysterectomy

Please provide order that procedure was carried out or provide the time procedure was carried out First Second Third Fourth Fifth

Time (hour-minute) EBL at procedure MLS

Other type of surgical procedure

Please provide order that procedure was carried out or provide the time procedure was carried out First Second Third Fourth Fifth

Time (hour-minute) EBL at procedure MLS

20. MOH - Interventional Radiology

Was interventional radiology (IR) used in this case?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Date: _____ Time: _____
If not, why not?	<input type="checkbox"/> Inappropriate, not considered <input type="checkbox"/> Not available in this unit <input type="checkbox"/> No IR team available at time of incident
If yes, was IR used?	<input type="checkbox"/> As emergency treatment for existing haemorrhage <input type="checkbox"/> Electively, to prevent a predicted haemorrhage

21. MOH - Quality of Care

Please indicate if any of these options apply for this case	<input type="checkbox"/> Unit have a protocol for the management of Obstetric Haemorrhage <input type="checkbox"/> Case discussed at a risk management meeting <input type="checkbox"/> Delay in accessing theatre
If your unit has a protocol for the management of obstetric haemorrhage, was the protocol adhered to in this case?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Please indicate approximately the time delay accessing theatre (minutes)	
What category does the management of this case fall into?	<input type="checkbox"/> Appropriate care, well managed <input type="checkbox"/> Incidental suboptimal care; lessons can be learned but did not affect final outcome <input type="checkbox"/> Minor suboptimal care; different management may have resulted in a different outcome <input type="checkbox"/> Major suboptimal care; poor management contributed significantly to morbidity
How was this view of the management reached?	<input type="checkbox"/> Risk management meeting <input type="checkbox"/> Clinical case presentation <input type="checkbox"/> Informal clinical discussion <input type="checkbox"/> Your own opinion
Was the woman offered a formal debrief following the MOH event?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Were staff offered a formal debrief/counseling support following the MOH event?	<input type="checkbox"/> Yes <input type="checkbox"/> No

22. MOH - Clinical records and documentation

What was the overall standard of the patient's records?	<input type="checkbox"/> Excellent: filed in clear sequence, easy to extract data <input type="checkbox"/> Good: mainly clear, but some features absent <input type="checkbox"/> Fair: significant deficiencies in filing <input type="checkbox"/> Poor: chaotic notes, difficult to find much information
What was the level of documentation of this clinical event?	<input type="checkbox"/> Excellent: easy to follow, entries signed and timed <input type="checkbox"/> Good: clear, though some gaps <input type="checkbox"/> Fair: significant gaps, not all entries signed and timed <input type="checkbox"/> Poor: major omissions, many unsigned, untimed entries <input type="checkbox"/> Non-existent
Was an obstetric haemorrhage proforma used?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If yes, in what location?	<input type="checkbox"/> Labour Ward <input type="checkbox"/> Theatre <input type="checkbox"/> Other: _____
Was a scribe present?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If not, was it a resource issue?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No recorded
If not, did they ask for a scribe?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No recorded
Did any other issues influence the management of this case?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If yes, please specify	
Lessons to be learned/examples of good practice	
Local action plan (what, when and by whom)	