Confidential Audit of Severe Maternal Morbidity (SMM) in Ireland

NATIONAL PERINATAL EPIDEMIOLOGY CENTRE 2021

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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National Perinatal Epidemiology Centre
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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?	☐ Private ☐ 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	☐ White Irish ☐ Irish Traveller ☐ Any other White background ☐ Asian or Asian Irish ☐ Black or Black Irish ☐ Other, including mixed ethnic backgrounds* ☐ 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?	☐ Yes ☐ No
If yes, please indicate timing of transfer in relation to pregnancy status	☐ Woman transferred with fetus in-uteru ☐ Woman transferred following delivery of baby
Name of referring maternity unit	
Was the care of this woman transferred TO another hospital?	☐ Yes ☐ No
If yes, please indicate timing of transfer in relation to pregnancy status	☐ Woman transferred with fetus in-uteru ☐ Woman transferred following delivery of baby
Name of maternity unit where the woman was transferred to	
Did the woman smoke at booking?	☐ Yes ☐ No ☐ Not recorded
If yes, please specify quantity	☐ Not recorded
Did she give up smoking during pregnancy?	☐ Yes ☐ No ☐ Not recorded
Did the woman drink alcohol at booking?	☐ Yes ☐ No ☐ Not recorded
Is there documented history of drug abuse or attendance at a drug rehabilitation unit?	☐ None recorded ☐ Prior to this pregnancy ☐ During this pregnancy

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

Neonatal Outcomes – Baby 1	
Birth weight in grams	
Intubation following delivery	☐ Yes ☐ No
Transferred to SBCU/NICU	☐ Yes ☐ No
Neonatal outcome	☐ 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) ☐ Late miscarriage (between 13 weeks and up to 24 weeks of gestation) ☐ Stillbirth (a baby delivered without signs of life from 24 weeks' gestation and/or with a birth weight of more or equal 500 gramme) ☐ Early neonatal death (death of a live born baby occurring before 7 completed days after birth) ☐ 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	☐ Yes ☐ No
Transferred to SBCU/NICU	☐ Yes ☐ No
Neonatal outcome	☐ 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) ☐ Late miscarriage (between 13 weeks and up to 24 weeks of gestation) ☐ Stillbirth (a baby delivered without signs of life from 24 weeks' gestation and/or with a birth weight of more or equal 500 gramme) ☐ Early neonatal death (death of a live born baby occurring before 7 completed days after birth) ☐ 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	☐ Yes ☐ No
Transferred to SBCU/NICU	☐ Yes ☐ No
Neonatal outcome	☐ 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) ☐ Late miscarriage (between 13 weeks and up to 24 weeks of gestation) ☐ Stillbirth (a baby delivered without signs of life from 24 weeks' gestation and/or with a birth weight of more or equal 500 gramme) ☐ Early neonatal death (death of a live born baby occurring before 7 completed days after birth) ☐ 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?'	☐ supported Care Pathway; Midwifery led and delivered care ☐ Assisted Care Pathway; Obstetric led, Midwifery and Obstetric delivered care ☐ Specialised Care Pathway; Obstetric led, Obstetric and Midwifery delivered care ☐ Not documented

3. SMM - Location and level of care

Please tick all that apply	☐ On the ward ☐ Delivery Suite ☐ Theatre ☐ High Dependency Unit ☐ ICU/CCU
Please indicate the HIGHEST level of care required during the clinical event	☐ Level 0: Normal ward care ☐ Level 1: Additional monitoring or intervention, or step down from higher level of care ☐ Level 2: Single Organ Support ☐ 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	☐ Yes ☐ No
Transfused with more or equal 5 units of blood	☐ Yes ☐ No
If MOH, did the woman received treatment for coagulopathy?	☐ Yes ☐ No
Uterine Rupture	☐ Yes ☐ No
Peripartum hysterectomy (PH) ☐ Yes ☐ No Was this a planned elective PH surgery? ☐ Yes ☐ No Place of surgey	
Please specify indication for PH in the text box below	
Eclampsia	☐ Yes ☐ No
Renal or liver dysfunction	☐ Yes ☐ No
Pulmonary Oedema	☐ Yes ☐ No
Acute respiratory dysfunction	☐ Yes ☐ No
Pulmonary Embolism	☐ Yes ☐ No
Cardiac arrest	☐ Yes ☐ No
Coma	☐ Yes ☐ No
Cerebro-vascular event	☐ Yes ☐ No
Status epilepticus	☐ Yes ☐ No
Septicaemic shock	☐ Yes ☐ No
Anaesthetic problem	☐ Yes ☐ No
ICU/CCU admission Please ensure this information matches the information selected in the location of care	☐ Yes ☐ No
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)	☐ Yes ☐ No
Please specify other SMM	
Interventional Radiology (IR) Please select all that apply	☐ Unplanned IR ☐ 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 ≥ 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 sysmptoms and signs of pre-eclampsia
5: Renal or liver dysfunction	Acute onset of biochemical disturbance, urea >15mmol/l, creatinine>400mmol/l, AST/ALT >200u/l
6: Pulmonary oedema	Clinically diagnosed pulmonary oedema associated with acute breathlessness and O2 saturation <95%, requiring O2, 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: • 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: • (a) or unplanned • (b) interventional radiology

Major Obstetric Haemorrhage Case Assessment Form 2021

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	☐ Early pregnancy <20 wks ☐ Antepartum ☐ Intra-partum ☐ 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)	☐ Prostin ☐ Artificial Rupture of the Membrane (ARM) ☐ Syntocinon ☐ Propess ☐ Other ☐ 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	☐ Yes ☐ No
Please specify method of augmentation/acceleration:	☐ ARM to augment labour ☐ 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 Obstetrican(s) performing the Caesarean Section	☐ Obstetric Registrar Post ☐ Doctor in training ☐ Consultant ☐ Other
If other, please specify	
If Emergency Caesarean Section was reported in the SMM audit. Was emergency c-section performed at full dilatation?	☐ Yes ☐ No
Was a consultant present?	☐ Yes ☐ No
Did the patient have a normal ultrasound for placental site?	☐ Yes ☐ 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	☐ Obstetric-led unit ☐ Alongside-Midwife-led unit ☐ At home c/o self-employed midwife ☐ At home c/o hospital Early Transfer Home Services/DOMINO scheme ☐ In transport (ambulance) ☐ At home/outwith hospital ☐ Other
If other, please specify	

Primary Cause of haemorrhage (Tick only one box)	☐ Abruption ☐ Retained placenta/membranes ☐ Uterine rupture ☐ Bleeding from uterine incision ☐ Placenta praevia ☐ Vaginal laceration/haematoma ☐ Uterine inversion ☐ Morbidly adherent placenta (placenta accrete or per accreta) ☐ Uterine atony ☐ Cervical laceration ☐ Broad ligament haematoma ☐ Other	**Other Cause of haemorrhage** (Tick all appropriate boxes)	☐ Abruption ☐ Retained placenta/membranes ☐ Uterine rupture ☐ Bleeding from uterine incision ☐ Placenta praevia ☐ Vaginal laceration/haematoma ☐ Uterine inversion ☐ Morbidly adherent placenta (placenta accrete or per accreta) ☐ Uterine atony ☐ Cervical laceration ☐ Broad ligament haematoma ☐ Other _____ ☐ 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?	☐ Yes ☐ No
If not received, why not?	☐ Not offered ☐ Refused by patient ☐ Other (specify)

What prophylaxis agent/dosage was given?	
Oxytocin/Syntocin (5-10 units IM/IV injection)	☐ Yes ☐ No
Oxytocin. (Please provide order drug was given)	☐ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth
(Oxytocin) (day-month-year) (hour-minute)	Date: Time:
Ergometrine (0.5mg IM/IV injection)	☐ Yes ☐ No
Ergometrine. (Please provide order drug was given)	☐ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth
(Ergometrine) (day-month-year) (hour-minute)	Date: Time:
Prostaglandin E1 (Misoprostol)	☐ Yes ☐ No
Misoprostol. (Please provide order drug was given)	☐ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth
(Misoprostol) (day-month-year) (hour-minute)	Date: Time:
Route 1st dose	☐ Oral ☐ Sublingual ☐ Vaginal ☐ Rectal
Syntometrine (5mg)	☐ Yes ☐ No
Syntometrine. (Please provide order drug was given)	☐ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth
(Syntometrine) (day-month-year) (hour-minute)	Date: Time:
Syntocinon infusion (40 units)	☐ Yes ☐ No
Syntocinon. (Please provide order drug was given)	☐ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth
(Syntocinon) (day-month-year) (hour-minute)	Date: Time:
Other type of drug	☐ Yes ☐ No
If other, please specify the name of the drug	
Other type of drug. (Please provide order drug was given)	☐ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth

10. MOH - Risk of haemorrhage and planning for delivery

Previous Pregnancies

Did the patient have a previous PPH (Post Partum Haemorrhage)?	☐ Yes ☐ No
Did the patient experience placenta praevia in the past?	☐ Yes ☐ No
Did the patient experience placenta accreta in the past?	☐ Yes ☐ No

Current Pregnancy

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

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

12. MOH - Resuscitation	
Please tick all the methods used for resuscitation	☐ Venous access PRIOR the event ☐ Venous access DURING the event ☐ 2 large venous cannulae sited ☐ 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?	☐ Yes ☐ No
If not transfused, did the patient refuse a blood transfusion?	☐ Yes ☐ No
Blood products	☐ "Emergency" O negative blood ☐ Group specific uncross-matched blood ☐ 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	☐ Fresh Frozen Plasma (FFP) ☐ Fibrinogen Concentrate ☐ Platelets ☐ Octoplas ☐ Activated Factor VII ☐ Other
Was there a delay in accessing blood?	☐ Yes ☐ 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 savage attempted?	☐ Yes ☐ No
If yes, how much blood was salvaged? (in mls)	
If cell salvage was not used, why not?	☐ Not appropriate (e.g. no laparotomy) ☐ Equipment not available ☐ Equipment not working ☐ No staff with appropriate experience ☐ Other (please specify below)
Please specify other reasons why cell savage was not used	
Was special equipment used to provide warm, rapid transfusion of IV fluids (including blood)?	☐ Yes ☐ No

15. MOH - Blood tests	
Was a full blood count taken DURING MOH event or resuscitation?	☐ Yes ☐ 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)?	☐ Yes ☐ 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)	☐ Yes ☐ No
Oxytocin. (Please provide order drug was given)	☐ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth
(Oxytocin) (day-month-year) (hour-minute)	Date: Time:
Ergometrine (0.5mg IM/IV injection)	☐ Yes ☐ No
Ergometrine. (Please provide order drug was given)	☐ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth
(Ergometrine) (day-month-year) (hour-minute)	Date: Time:
Prostaglandin E1 (Misoprostol)	☐ Yes ☐ No
Misoprostol. (Please provide order drug was given)	☐ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth
(Misoprostol) (day-month-year) (hour-minute)	Date: Time:
Route 1st dose	☐ Oral ☐ Sublingual ☐ Vaginal ☐ Rectal
Syntometrine (5mg)	☐ Yes ☐ No
Syntometrine. (Please provide order drug was given)	☐ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth
(Syntometrine) (day-month-year) (hour-minute)	Date: Time:
Syntocinon infusion (40 units)	☐ Yes ☐ No
Syntocinon. (Please provide order drug was given)	☐ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth
(Syntocinon) (day-month-year) (hour-minute)	Date: Time:
Tranexamic Acid (1gram)	☐ Yes ☐ No
Tranexamic. (Please provide order drug was given)	☐ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth
1st dose (Tranexamic) (day-month-year) (hour-minute)	Date: Time:
Prostaglandin F2-alpha (Carboprost/Haemabate)	
Carboprost. (Please provide order drug was given)	☐ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth
1st dose (Carboprost) (day-month-year) (hour-minute)	Date: Time:
Route 1st dose	☐ Oral ☐ Sublingual ☐ Vaginal ☐ Rectal
Other type of drug	☐ Yes ☐ No
If other, please specify the name of the drug	
Other type of drug. (Please provide order drug was given)	☐ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth
1st dose (Carboprost) (day-month-year) (hour-minute)	Date: Time:
Route 1st dose	☐ Oral ☐ Sublingual ☐ Vaginal ☐ 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?	☐ Yes ☐ No Date: Time:
If not, why not?	☐ Inappropriate, not considered ☐ Not available in this unit ☐ No IR team available at time of incident
If yes, was IR used?	☐ As emergency treatment for existing haemorrhage ☐ Electively, to prevent a predicted haemorrhage

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

22. MOH - Clinical records and documentation	
What was the overall standard of the patient's records?	☐ **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
What was the level of documentation of this clinical event?	☐ **Excellent:** easy to follow, entries signed and timed ☐ **Good:** clear, though some gaps ☐ **Fair:** significant gaps, not all entries signed and timed ☐ **Poor:** major omissions, many unsigned, untimed entries ☐ **Non-existent**
Was an obstetric haemorrhage proforma used?	☐ Yes ☐ No
If yes, in what location?	☐ Labour Ward ☐ Theatre ☐ Other:
Was a scribe present?	☐ Yes ☐ No
If not, was it a resource issue?	☐ Yes ☐ No ☐ No recorded
If not, did they ask for a scribe?	☐ Yes ☐ No ☐ No recorded
Did any other issues influence the management of this case?	☐ Yes ☐ No
If yes, please specify	
Lessons to be learned/examples of good practice	
Local action plan (what, when and by whom)	