NATIONAL PERINATAL EPIDEMIOLOGY CENTRE

AUDIT OF MID-TRIMESTER PROLONGED RUPTURE OF MEMBRANES

NOTIFICATION FORM 2017

Inclusion Criteria: Rupture of membranes occurring between gestations of 12 weeks, 0 days and 23 weeks, 6 days (inclusive) and which is of 24 hours or more in duration.

Please complete this form in cases of mid-trimester prolonged rupture of membranes. Please return completed forms to:

Indra Campillo,
National Perinatal Epidemiology Centre,
5th Floor, Cork University Maternity Hospital,
Wilton,
Cork, T12YE02

Should you have any queries regarding this form, please do not hesitate to contact Indra Campillo by phone: 021 420 50 24, or by e-mail: indra.campillo@ucc.ie

NPEC Case Number (If Applicable):

Hospital: **Reporter Name:**

Staff Grade: **Contact Email:**

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SECTION 1: WOMAN'S DETAILS

1.1 Woman's age ☐

1.2 Ethnic group

☐ White-Irish ☐ Irish Traveller

☐ Any other White background (Please specify country of origin) _____

☐ Asian or Asian Irish ☐ Black or Black Irish ☐ Other (Please specify) _____

1.3 Woman's employment status at booking

☐ Employed or self-employed (Full or part time) ☐ Unemployed (Looking for work)

☐ Student ☐ Home maker ☐ Permanently sick/disabled

☐ Other_____ ☐ Unknown

1.4 Body Mass Index at booking (BMI) ☐

1.5 Did the woman smoke at booking? ☐ Yes ☐ No ☐ Unknown

If yes, please specify quantity smoked per day ☐

1.6 Did the woman drink alcohol at booking? ☐ Yes ☐ No ☐ Unknown

If yes, please specify units per week ☐

1.7 Did the woman take illicit drugs at booking? ☐ Yes ☐ No ☐ Unknown

If yes, please specify which _____

SECTION 2: PREVIOUS PREGNANCIES

2.1 Did the woman have any previous pregnancies? ☐ Yes ☐ No

2.2 Number of completed pregnancies ≥ 24 weeks and/or with a birth weight ≥ 500g (all live and stillbirths) ☐

2.3 Were there any previous pregnancy problems? ☐ Yes ☐ No

If yes, please tick all that apply:

☐ Spontaneous pregnancy loss ≤ 12weeks

☐ Spontaneous pregnancy loss ≥ 12 weeks and ≤ 24 weeks

☐ Evacuation of Retained Products of Conception (ERPC)

☐ Termination of Pregnancy ≤ 12weeks

If yes, how many? _____ Medical or Surgical TOP _____

☐ Termination of Pregnancy ≤ 24 weeks

If yes, how many? _____ Medical or Surgical TOP _____

☐ Prematurity ≤ 34 weeks and 0 days ☐ Prematurity ≤ 37 weeks and 0 days

☐ Caesarean section ☐ Cervical cerclage (vaginal) ☐ Cervical cerclage (abdominal)

If pregnancy loss ≥ 12 weeks and ≤ 24 weeks, what was the gestation?

☐☐ weeks + ☐☐ days ☐☐ weeks + ☐☐ days ☐☐ weeks + ☐☐ days

SECTION 3: PREVIOUS MEDICAL HISTORY

3.1 Did the woman have any of the following? Please tick all that apply.

☐ Fibroid(s) ☐ Congenital abnormality of the genital tract

☐ ≥ 3 Urinary tract infections ☐ Sexually transmitted infection

☐ Large Loop Excision of the Transformation Zone (LLETZ) If LLETZ, how many? ☐☐

☐ Other cervical surgery, please specify _____

SECTION 4.1: THIS PREGNANCY

4.1.1 Conception: ☐ Spontaneous ☐ IVF ☐ IVF donor

☐ Other, please specify _____

4.1.2 Gestation at first booking appointment: ☐☐ weeks + ☐☐ days

4.1.3 Estimated Date of Delivery (EDD): ☐☐ / ☐☐ / ☐☐☐☐ ☐ Unknown

4.1.4 Gestation at booking ultrasound scan: ☐☐ weeks + ☐☐ days

4.1.5 Type of pregnancy: ☐ Singleton ☐ Multiple

4.1.6 If multiple pregnancy, please state number of babies: ☐ Twins ☐ Triplets ☐ Higher order

4.1.7 If multiple pregnancy, what was the chorionicity? ☐ Monochorionic ☐ Dichorionic

4.1.8 Did the woman undergo an anatomy scan? ☐ Yes ☐ No

If yes, at what gestation? ☐☐ weeks + ☐☐ days

4.1.9 Did the woman attend a specialist clinic? ☐ Yes ☐ No

If yes, what type? _____

SECTION 4.2: COMPLICATIONS OF THIS PREGNANCY

4.2.1 Did the woman experience vaginal bleeding? ☐ Yes ☐ No

If yes, how many episodes at ≤ 12 weeks and 0 days? ☐

If yes, how many episodes between 12 weeks 1 day and 23 weeks and 6 days (inclusive)? ☐

At what gestation/s did it/they occur? ☐ weeks + ☐ days ☐ weeks + ☐ days

4.2.2 Did the woman experience any of the following? Please tick those that apply.

☐ Sub-chorionic haematoma ☐ Urinary tract infection ☐ Vaginal infection

4.2.3 Did the woman undergo a chorionic villous biopsy? ☐ Yes ☐ No

If yes, at what gestation? ☐ weeks + ☐ days

4.2.4 Did the woman undergo an amniocentesis? ☐ Yes ☐ No

If yes, at what gestation? ☐ weeks + ☐ days

4.2.5 Did the woman undergo ultrasound assessment of cervical length? ☐ Yes ☐ No

If yes, please specify the length: ☐

4.2.6 Was progesterone administered? ☐ Yes ☐ No

4.2.7 Was a cervical pessary inserted? ☐ Yes ☐ No

4.2.8 Was a cerclage inserted? ☐ Yes ☐ No

If yes, what type? _____ At what gestation? ☐ weeks + ☐ days

Was it removed? ☐ Yes ☐ No If yes, at what gestation? ☐ weeks + ☐ days

SECTION 5: PRESENTATION (FOR SUSPECTED PPROM EVENT)

5.1 Was the baby transferred in-utero? ☐ Yes ☐ No

If yes, what was the gestation at transfer? ☐ weeks + ☐ days

5.2 At what gestation did the woman present to your hospital? ☐ weeks + ☐ days

5.3.1 What was the diagnosis? ☐ Oligohydramnios (AFI < 5) ☐ Anhydramnios

5.3.2 How was the diagnosis confirmed?

☐ Liquor seen on speculum examination ☐ Amnisure ☐ Ultrasound

5.3.3 What was the date of diagnosis? ☐ / ☐ / ☐

5.3.4 What staff grade made the diagnosis? _____

SECTION 6: ANTE-PARTUM

6.1.1 How was the woman managed? ☐ In-patient ☐ Out-patient

6.1.2 If managed as an out-patient, what was the gestation at last admission? ☐ weeks + ☐ days

6.2. Were prophylactic antibiotics administered? ☐ Yes ☐ No

If yes, please specify type: _____

6.3 Were tocolytics administered? ☐ Yes ☐ No

6.4 Were steroids administered for lung maturity? ☐ Yes ☐ No

If yes, how many hours between 1st injection and delivery? ☐

If yes, how many hours between 2nd injection and delivery? ☐

6.5 Was magnesium sulphate administered for neuroprotection? ☐ Yes ☐ No

6.6 Please tick if any of the following was diagnosed:

☐ chorioamnionitis* ☐ sepsis** ☐ severe sepsis***

*Defined as the presence – documented or suspected – of intra-uterine infection: pyrexia, maternal tachycardia, uterine tenderness, abnormal fetal heart rate pattern, abnormal vaginal discharge, meconium, elevated WCC, elevated CRP, elevated lactate, clinical absence of other focus of infection; may or may not fulfil criteria for sepsis/severe sepsis.

**Defined as the presence – documented or suspected – of infection with systemic manifestations of infection: pyrexia ≥ 380C or < 360C, heart rate > 100, respiratory rate > 20, WCC > 16.9 OR < 4x 109/dl).

***Defined as sepsis plus sepsis-induced organ dysfunction or tissue hypoperfusion: systolic BP <90 or a systolic decrease > 40 mmHg, altered mental status, lactate > 2mmol/L, oliguria < 0/5mls/Kg/hr, decreased capillary refill or mottling).

6.7 Were therapeutic antibiotics administered? ☐ Yes ☐ No

If yes, please complete the table:

Antibiotic	Indication	Start Date	Completion Date	Gestation	Interval to Delivery

6.8.1 Was ante-partum haemorrhage diagnosed? ☐ Yes ☐ No

6.8.2 Did the woman receive a blood transfusion? ☐ Yes ☐ No

6.9 Was an intra-uterine fetal death diagnosed? ☐ Yes ☐ No

If yes, what was the gestation? ☐ weeks + ☐ days

If yes, what was the birth weight? ☐ kg

SECTION 7: INTRA-PARTUM

If multiple pregnancy, please use additional form

7.1 Was the baby alive at onset of intra-partum care? ☐ Yes ☐ No ☐ Unknown

7.2 What was the onset of labour? ☐ Spontaneous ☐ Induced ☐ Never in Labour

7.3 What was the location of care at onset of labour? ☐ In-Hospital ☐ Ex-hospital

7.4 What was the date at onset of labour? ☐☐ / ☐☐ / ☐☐☐☐

7.5 What was the gestation at onset of labour? ☐☐ weeks + ☐☐ days

7.6 If the labour was induced, please state:

Indication _____

Method _____

7.7 What was the duration of labour? ☐☐☐

7.8 Please tick any of the following if diagnosed during labour:

☐ Pyrexia ☐ Sepsis ☐ Severe sepsis

7.9 What was the mode of delivery? Please tick all that apply

☐ Vaginal cephalic delivery ☐ Ventouse ☐ Forceps ☐ Assisted Breech delivery

☐ Vaginal Breech delivery ☐ Pre-Labour Caesarean Section ☐ Caesarean Section After Onset of Labour

7.10.1 If the woman had a Caesarean section, what was the indication?

_____

7.10.2 What was the type of Caesarean section? ☐ Lower segment ☐ Classical

7.11 What was the date of delivery? ☐☐ / ☐☐ / ☐☐☐☐

7.12 What was the duration of membrane rupture? ☐☐ weeks ☐☐ days

SECTION 8: POST-PARTUM

8.1.1 Was a post-partum haemorrhage diagnosed? ☐ Yes ☐ No

8.1.2 If yes, what was the estimated blood loss? ☐☐☐☐

8.1.3 Did the woman receive a blood transfusion? ☐ Yes ☐ No

8.2 Was manual removal of the placenta undertaken? ☐ Yes ☐ No

8.3 Was an infection diagnosed? ☐ Yes ☐ No

If yes, please tick any that apply:

☐ Endometritis ☐ Sepsis ☐ Severe Sepsis ☐ Wound infection

8.4 Was a maternal morbidity diagnosed? ☐ Yes ☐ No

Please refer to Definitions of Maternal Morbidities on page 12.

If yes, please specify morbidity _____

8.5 What was the location of post-natal maternal care?

Please tick any that apply:

☐ Labour Ward ☐ Maternity Ward ☐ High Dependency Unit (HDU)

☐ Intensive Care Unit (ICU) ☐ Critical Care Unit (ICU)

8.6 Was the woman re-admitted following discharge? ☐ Yes ☐ No

If yes, please describe:

Indication _____

Timing _____

Diagnosis _____

SECTION 9.1: MATERNAL MICROBIOLOGY LABORATORY RESULTS

9.1.1 High vaginal swabs

Please complete table if applicable:

Specify if taken antenatally or postnatally	Organism(s)	Resistance	Antibiotic

9.1.2 Placental swabs

Please complete table if applicable:

Specify if taken antenatally or postnatally	Organism(s)	Resistance	Antibiotic

9.1.3 Blood cultures

Please complete table if applicable:

Specify if taken antenatally or postnatally	Organism(s)	Resistance	Antibiotic

SECTION 9.2: PLACENTAL HISTOLOGY

Please refer to the guidance notes on page 13. Please note there is no requirement to complete this section should you wish to submit an anonymised copy of the placental histology report to the NPEC.

☐ **No abnormal histology reported**

☐ **Chorioamnionitis** ☐ Mild ☐ Moderate ☐ Severe

☐ **Fetal vasculitis** ☐ Arterial ☐ Venous ☐ Both

☐ **Maternal vascular malperfusion (uteroplacental insufficiency)**

Please specify pathology:

☐ Distal villous hypoplasia ☐ Placental hypoplasia

☐ Accelerated villous maturation ☐ Ischaemic villous crowding

☐ Placental infarction → Please specify approximate percentage involved _____

☐ Retroplacental haemorrhage → Please specify approximate percentage of maternal surface involved _____

☐ **Fetal vascular malperfusion:**

Please specify pathology:

☐ Patchy hypoperfusion ☐ Scattered avascular villi

☐ Thrombosis in fetal circulation ☐ Fetal thrombotic vasculopathy

☐ **Cord pathology as sole finding**

Please specify pathology:

☐ Hypercoiled cord ☐ Hypocoiled cord ☐ Meconium associated vascular necrosis

☐ Vasa praevia ☐ Velamentous cord ☐ Other, please specify_____

☐ **Cord pathology associated with distal disease**
Please specify associated distal disease:

☐ Delayed villous maturation ☐ Thrombosis in fetal circulation

☐ **Villous maturation defect (distal villous immaturity/ delayed villous maturation)**

☐ **Villitis** → ☐ Low grade ☐ High grade ☐ With stem vessel obliteration

☐ **Other**, please specify _____

_____

SECTION 10.1: NEONATAL OUTCOME

10.1.1 What was the neonatal outcome? ☐ Stillborn ☐ Neonatal death

☐ Liveborn ☐ Second trimester miscarriage

☐ Not applicable (Intra-uterine fetal death)

10.1.2 What was the gestation at delivery? ☐☐ weeks + ☐☐ days

10.1.3 If the baby died, was a post-mortem undertaken? ☐ Yes ☐ No

If the baby died, did it become a Coroner's Case? ☐ Yes ☐ No

If the baby died, which condition was the MAIN condition or sentinel event causing or associated with the death? ***Please refer to the post-mortem and placental histology reports.***

10.1.4 Presentation at delivery ☐ Cephalic ☐ Breech ☐ Other, please specify _____

10.1.5 Sex ☐ Male ☐ Female

10.1.6 Birth weight (Kg) ☐☐☐ kg

10.1.7 Apgar score 1 minute ☐☐ 5 minutes ☐☐

10.1.8 Cord pH arterial ☐☐☐ venous ☐☐☐

10.1.9 Neonatal team at delivery ☐ Yes ☐ No

10.1.10 Delayed cord clamping ☐ Yes ☐ No

10.1.11 Was the baby offered active resuscitation in the Delivery Room? Please tick all that apply:

Neopuff/BMV	☐ Yes	☐ No
ETT	☐ Yes	☐ No
CPR	☐ Yes	☐ No
Adrenaline	☐ Yes	☐ No

10.1.12 Was the baby admitted to the NICU? ☐ Yes ☐ No

10.1.13 Did the baby have any of the following?
Please tick all that apply

- ☐ Any major birth defect
- ☐ Surfactant in delivery room
- ☐ Surfactant at any time
- ☐ Non-invasive ventilation
- ☐ Conventional ventilation
- ☐ High frequency ventilation
- ☐ Inhaled nitric oxide
- ☐ Respiratory Distress Syndrome
- ☐ Pneumothorax
- ☐ Steroids for Chronic Lung Disease
- ☐ Chronic Lung Disease ($O_2 \geq 36$ weeks)
- ☐ Early bacterial sepsis
- ☐ Late bacterial sepsis
- ☐ Coagulase-negative staphylococcal (CONS) infection
- ☐ Nosocomial bacterial infection
- ☐ Fungal infection
- ☐ Any late infection (bacterial or fungal)
- ☐ Necrotizing Enterocolitis (NEC)
- ☐ NEC surgery
- ☐ Patent Ductus Arteriosus (PDA) – medical treatment
- ☐ PDA ligation

☐ Severe Retinopathy of Prematurity (ROP) (Stage III – IV)

☐ Anti-VEGF Rx

☐ Surgery for ROP

☐ Any grade of Intra-Ventricular Haemorrhage (IVH) (Grade 1 – IV)

☐ Severe IVH (Grade III – IV)

☐ Hypoxic Ischemic Encephalopathy (HIE) ≥ 37 weeks 0 days

☐ Grade I ☐ Grade II ☐ Grade III

☐ Limb deformity due to oligohydramnios

10.1.14 If the baby survived to discharge, what was the age at last follow-up? _____

If the baby survived to discharge, what was the status at last follow-up?

_____

SECTION 10.2: NEONATAL MICROBIOLOGY LABORATORY RESULTS

10.2.1 Blood culture

Please complete table if applicable:

Age	Organism	Resistance

10.2.2 Lumbar puncture

Please complete table if applicable:

Age	Organism	Resistance

Definitions of Maternal Morbidity (Section 8.4)		
1	Major obstetric haemorrhage	Estimated blood loss ≥ 2500ml, or transfused 5 or more units of blood or received treatment for coagulopathy (Fresh Frozen Plasma; Fibrinogen Concentrate Substitution Therapy; Platelets) (Also includes ectopic pregnancy meeting these criteria)
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 >15mmol/l, creatinine>400mmol/l, AST/ALT >200u/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	Despite fluid resuscitation: MAP <65mmHg or Systolic BP <90mmHg or Lactate >4mmol/L
14	Anaesthetic 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

Guidance Notes for Completion of Placental Histology (Section 9.2)	
CATEGORY OF PLACENTAL PATHOLOGY	
NO ABNORMAL HISTOLOGY REPORTED	No abnormal pathology reported.
CHORIOAMNIONITIS	Please specify if the finding of chorioamnionitis was reported as mild, moderate or severe.
FETAL VASCULITIS	Please specify if the finding of fetal vasculitis was arterial, venous or in both vessels.
MATERNAL VASCULAR MALPERFUSION (UTEROPLACENTAL INSUFFICIENCY)	Refers to the spectrum of findings related to shallow implantation of the placenta, often found in conjunction with PET and IUGR. Please specify the conditions associated with this finding: **Distal villous hypoplasia** is an early/severe form of maternal vascular malperfusion and is often accompanied by absent or reduced end-diastolic flow. This usually occurs at less than 32 weeks gestation. **Accelerated villous maturation, ischaemic villous crowding and placental infarction** are other findings associated with maternal vascular malperfusion. **These conditions are listed in increasing order of severity in question 11.1.8, please tick the most severe finding**. **Retroplacental haemorrhage** frequently occurs with a background of maternal vascular malperfusion, but may occur in isolation with no other identified placental disease. **Placental hypoplasia:** the placenta may be small in cases of maternal vascular malperfusion. While no standards for Ireland currently exist, placental weight <350g at term is taken to be the 10th centile and warrants use of the term hypoplasia. The finding of a small histologically normal placenta should be reported here.
FETAL VASCULAR MALPERFUSION	Refers to thrombosis or the effect thereof in the fetal circulation. It may be difficult to distinguish arterial from venous vessels, and pathology may be present in both. The findings of fetal vascular malperfusion are listed in order of severity: patchy hypofusion, scattered avascular villi and fetal thrombotic vasculopathy. Please tick the most severe finding
CORD PATHOLOGY	Cord pathology may exist by itself, or may be accompanied by evidence of other disease. Abnormal cord insertion (marginal/velamentous) may be seen in cases of shallow implantation. **Cord hypercoiling** A diagnosis of cord hypercoiling should be supported by measurement of an umbilical coiling index (number of coils/length of the cord in cm) of 0.3 or more. Cord stricture should be sought in these cases. Where delayed placental maturation is accompanied by a hypercoiled cord, it suggests that the latter may have caused the former. Other effects of impaired fetal flow include multiple non-occlusive thrombi in chorionic plate or fetal stem vessels.
VILLOUS MATURATION DEFECT	Villous maturation defect is a term used synonymously with distal villous immaturity.
VILLITIS	The term is used to mean villitis of unknown aetiology, and assumes that the reporting pathologist has excluded infection where appropriate.
OTHER	Please specify any other pathological findings reported by the pathologist e.g. maternal floor infarction.
Please note there is no requirement to complete Section 9.2 if you wish to submit an anonymised copy of the placental histology report to the NPEC.	