AUDIT OF DELAYED DELIVERY INTERVAL
IN PREMATURE MULTIPLE PREGNANCY
NOTIFICATION FORM 2017

Inclusion Criteria: Delayed interval of delivery in premature multiple pregnancy is defined as
greater than or equal to 12 hours between the delivery of the first baby and the subsequent baby
or babies.

Please complete this form in cases of delayed interval delivery in premature multiple pregnancy.
Please return completed forms to:
   Linda Drummond
   National Perinatal Epidemiology Centre
   5th Floor, Cork University Maternity Hospital
   Wilton, Cork T12YE02
Should you have any queries or difficulties regarding the form, please do not hesitate to contact
Linda Drummond by phone: 021 4205017 or by e-mail: l.drummond@ucc.ie

NPEC IDENTIFICATION NUMBER (IF Applicable):
   HOSPITAL: 
   Reporter Name:
   Staff Grade: 
   Contact Email:

Table of Contents
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 1: Woman's Details</td>
<td>2</td>
</tr>
<tr>
<td>Section 2: Previous Pregnancies</td>
<td>2</td>
</tr>
<tr>
<td>Section 3: Previous Medical History</td>
<td>3</td>
</tr>
<tr>
<td>Section 4.1: This Pregnancy</td>
<td>3</td>
</tr>
<tr>
<td>Section 4.2: Complications of this Pregnancy</td>
<td>3</td>
</tr>
<tr>
<td>Section 5: Labour and Delivery of First Baby</td>
<td>4</td>
</tr>
<tr>
<td>Section 6: Delayed Interval (following birth of first baby)</td>
<td>5</td>
</tr>
<tr>
<td>Section 7: Delayed Delivery (of second, third and higher order babies)</td>
<td>6</td>
</tr>
<tr>
<td>Section 8: Post-Partum</td>
<td>6</td>
</tr>
<tr>
<td>Section 9.1: Microbiology – Woman</td>
<td>7</td>
</tr>
<tr>
<td>Section 9.2: Placental Histology</td>
<td>8</td>
</tr>
<tr>
<td>Section 10.1: Neonatal Outcome – First Baby</td>
<td>9</td>
</tr>
<tr>
<td>Section 10.2: Microbiology – First Baby</td>
<td>11</td>
</tr>
<tr>
<td>Section 11.1: Neonatal Outcome – Second Baby</td>
<td>11</td>
</tr>
<tr>
<td>Section 11.2: Microbiology – Second Baby</td>
<td>14</td>
</tr>
<tr>
<td>Section 12.1: Neonatal Outcome – Third Baby</td>
<td>14</td>
</tr>
<tr>
<td>Section 12.2: Microbiology – Third Baby</td>
<td>16</td>
</tr>
<tr>
<td>Definitions of Maternal Morbidities</td>
<td>17</td>
</tr>
<tr>
<td>Guidance Notes for Completion of Placental Histology Section</td>
<td>18</td>
</tr>
</tbody>
</table>
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 ≤ 12 weeks
- [ ] Spontaneous pregnancy loss ≥ 12 weeks and ≤ 24 weeks
- [ ] Evacuation of Retained Products of Conception (ERPC)
- [ ] Termination of Pregnancy (TOP) ≤ 12 weeks
  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 at each pregnancy, what was the gestation?

| weeks | weeks | weeks | weeks |

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

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 multiple pregnancy: Twins Triplets
- Higher order, please specify ____________________________

4.1.6 Chorionicity
- Monochorionic
- Dichorionic

4.1.7 Did the woman undergo an anatomy scan? Yes No
- If yes, at what gestation? ____ weeks + ____ days

4.1.8 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 24 weeks and 0 days? ____
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

#### 4.2.9 Were the babies transferred in-utero?

- [ ] Yes  
- [ ] No

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

---

### SECTION 5: LABOUR AND DELIVERY OF FIRST BABY

#### 5.1 Was the baby alive at onset of labour?

- [ ] Yes  
- [ ] No  
- [ ] Unknown

#### 5.2 Were tocolytics administered?

- [ ] Yes  
- [ ] No

#### 5.3 Were steroids administered for lung maturity?

- [ ] Yes  
- [ ] No

If yes, how many hours between 1\textsuperscript{st} injection and delivery? [ ]

If yes, how many hours between 2\textsuperscript{nd} injection and delivery? [ ]

#### 5.4 Was magnesium sulphate administered for neuroprotection?

- [ ] Yes  
- [ ] No

#### 5.5 Were antibiotics administered?

- [ ] Yes  
- [ ] No  

If yes, please specify type [ ]

#### 5.6 What was the duration of membrane rupture at delivery? [ ]

#### 5.7 What was the location of delivery?

- [ ] Ex-hospital  
- [ ] InHospital

- [ ] Labour ward  
- [ ] Elsewhere, please specify [ ]
SECTION 6: DELAYED INTERVAL (FOLLOWING BIRTH OF FIRST BABY)

6.1 Decision to delay made by:
- ☐ Consultant
- ☐ >1 Consultant
- ☐ Multi-Disciplinary Team
- ☐ Not documented

6.2 Was the woman retained in hospital? ☐ Yes ☐ No

6.3 Was/were the baby/babies transferred in utero? ☐ Yes ☐ No

6.4 Were tocolytics administered? ☐ Yes ☐ No

6.5 Were steroids administered for lung maturity? If yes, how many hours between 1st injection and delivery? ☐
If yes, how many hours between 2nd injection and delivery? ☐

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

6.7 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 10^9/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).

6.8 Were therapeutic antibiotics administered? ☐ Yes ☐ No

If yes, please complete the table:

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>Indication</th>
<th>Start Date</th>
<th>Completion Date</th>
<th>Gestation</th>
<th>Interval to Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6.9.1 Was an ante-partum haemorrhage diagnosed?  □ Yes  □ No
6.9.2 Did the woman receive a blood transfusion?  □ Yes  □ No
6.10 Was an intra-uterine fetal death diagnosed?
If yes, what was the gestation?  □ weeks + □ days
If yes, what was the birth weight?  □ kg

SECTION 7: DELAYED DELIVERY (OF SECOND, THIRD AND HIGHER ORDER BABIES)

7.1 Was/were the baby/babies alive at onset of delayed delivery?  □ Yes  □ No  □ Unknown
7.2 What was the date at onset of delayed delivery?  □/□/□
7.3 What was the gestation at onset of delayed delivery?  □ weeks + □ days
7.3.1 Did the woman labour?  □ Yes  □ No
7.3.2 If yes, what was the onset of labour?  □ Spontaneous  □ Induced
7.4 If the labour was induced, please state:
Indication ____________________________________________________________
Method ______________________________________________________________
7.5 What was the duration of labour?  □
7.6 Please tick any of the following if diagnosed during labour:
□ Pyrexia  □ Sepsis  □ Severe sepsis
7.7 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
7.8 If spontaneous vaginal delivery, what was the location of delivery of 2nd baby? ___________________________ and 3rd baby? _________________________________
7.9.1 If the woman had a Caesarean section, what was the indication? ________________________________________________________________
7.9.2 If the woman had a Caesarean section, what was the type?  □ Lower segment  □ Classical
7.10.1 What was the date of delivery of 2nd baby?  □/□/□
7.10.2 What was the date of delivery of 3rd baby?  □/□/□
7.11.1 Was a consultant obstetrician present?  □ Yes  □ No
7.11.2 Was a consultant neonatologist present?  □ Yes  □ No
SECTION 8: POST-PARTUM

8.1 Was a post-partum haemorrhage diagnosed?  Yes ☐  No ☐
If yes, what was the estimated blood loss? 

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 17.
If yes, please specify morbidity ________________________________

8.5 Was the woman transferred?  Yes ☐  No ☐
If yes, please tick any that apply:
☐ High Dependency Unit (HDU)  ☐ Intensive Care Unit (ICU)  ☐ Critical Care Unit (ICU)

8.6 Was the woman re-admitted?  Yes ☐  No ☐
If yes, please describe:
Indication ________________________________________________________________
Timing ________________________________________________________________
Diagnosis ______________________________________________________________

SECTION 9.1: MICROBIOLOGY - WOMAN

9.1.1 High vaginal swabs
Please complete table if applicable:
<table>
<thead>
<tr>
<th>Specify if taken antenatally or postnatally</th>
<th>Organism (s)</th>
<th>Resistance</th>
<th>Antibiotic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


### 9.1.2 Placental swabs
Please complete table if applicable:

<table>
<thead>
<tr>
<th>Specified if taken</th>
<th>Organism(s)</th>
<th>Resistance</th>
<th>Antibiotic</th>
</tr>
</thead>
<tbody>
<tr>
<td>antenatally or postnatally</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 9.1.3 Blood cultures
Please complete table if applicable:

<table>
<thead>
<tr>
<th>Specified if taken</th>
<th>Organism(s)</th>
<th>Resistance</th>
<th>Antibiotic</th>
</tr>
</thead>
<tbody>
<tr>
<td>antenatally or postnatally</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SECTION 9.2: PLACENTAL HISTOLOGY

Please refer to the guidance notes on page 18. 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
<table>
<thead>
<tr>
<th>Cord pathology as sole finding</th>
<th>Please specify pathology:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Hypercoiled cord</td>
<td>☐ Hypocoiled cord</td>
</tr>
<tr>
<td>☐ Vasa praevia</td>
<td>☐ Velamentous cord</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cord pathology associated with distal disease</th>
<th>Please specify associated distal disease:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Delayed villous maturation</td>
<td>☐ Thrombosis in fetal circulation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Villous maturation defect (distal villous immaturity/ delayed villous maturation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Villitis → ☐ Low grade ☐ High grade ☐ With stem vessel obliteration</td>
</tr>
<tr>
<td>☐ Other, please specify ______________________________________________________</td>
</tr>
</tbody>
</table>

SECTION 10.1: NEONATAL OUTCOME – FIRST BABY

10.1.1 Neonatal Outcome ☐ Stillborn ☐ Neonatal death ☐ Second trimester miscarriage
☐ Liveborn ☐ Not applicable (Intra-uterine fetal death)

10.1.2 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

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neopuff/BMV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adrenaline</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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: MICROBIOLOGY - FIRST BABY

10.2.1 Blood culture (if taken)
Please complete table if applicable:

<table>
<thead>
<tr>
<th>Age</th>
<th>Organism</th>
<th>Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10.2.2 Lumbar puncture (if taken)
Please complete table if applicable:

<table>
<thead>
<tr>
<th>Age</th>
<th>Organism</th>
<th>Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### SECTION 11.1: NEONATAL OUTCOME – SECOND BABY

#### 11.1.1 Neonatal Outcome
- Stillborn
- Neonatal death
- Second trimester miscarriage
- Liveborn
- Not applicable (Intra-uterine fetal death)

#### 11.1.2 Gestation at delivery
- [ ] weeks + [ ] days

#### 11.1.3 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.*

#### 11.1.4 Presentation at delivery
- Cephalic
- Breech
- Other, please specify _______________

#### 11.1.5 Sex
- Male
- Female

#### 11.1.6 Birth weight (Kg)
- [ ] kg

#### 11.1.7 Apgar score
- 1 minute [ ]
- 5 minutes [ ]

#### 11.1.8 Cord pH
- arterial [ ]
- venous [ ]

#### 11.1.9 Neonatal team at delivery
- [ ] Yes
- [ ] No

#### 11.1.10 Delayed cord clamping
- [ ] Yes
- [ ] No

#### 11.1.11 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

#### 11.1.12 Was the baby admitted to the NICU?
- [ ] Yes
- [ ] No

#### 11.1.13 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
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?

**11.1.14 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?

- Non-invasive ventilation
- Conventional ventilation
- High frequency ventilation
- Inhaled nitric oxide
- Respiratory Distress Syndrome
- Pneumothorax
- Steroids for Chronic Lung Disease
- Chronic Lung Disease (O2 ≥ 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
SECTION 11.2: MICROBIOLOGY - SECOND BABY

11.2.1 Blood culture (if taken)
Please complete table if applicable:

<table>
<thead>
<tr>
<th>Age</th>
<th>Organism</th>
<th>Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11.2.2 Lumbar puncture (if taken)
Please complete table if applicable:

<table>
<thead>
<tr>
<th>Age</th>
<th>Organism</th>
<th>Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 12.1: NEONATAL OUTCOME – THIRD BABY

12.1.1 Neonatal Outcome
☐ Stillborn  ☐ Neonatal death  ☐ Second trimester miscarriage
☐ Liveborn  ☐ Not applicable (Intra-uterine fetal death)

12.1.2 Gestation at delivery
☐ weeks + ☐ days

12.1.3 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.

12.1.4 Presentation at delivery
☐ Cephalic  ☐ Breech  ☐ Other, please specify ________________

12.1.5 Sex
☐ Male  ☐ Female

12.1.6 Birth weight (Kg)
☐ kg
### 12.1.7 Apgar score
- 1 minute
- 5 minutes

### 12.1.8 Cord pH
- arterial
- venous

### 12.1.9 Neonatal team at delivery
- Yes
- No

### 12.1.10 Delayed cord clamping
- Yes
- No

### 12.1.11 Was the baby offered active resuscitation in the Delivery Room?
Please tick all that apply

- Neopuff/BMV
- ETT
- CPR
- Adrenaline

### 12.1.12 Was the baby admitted to the NICU?
- Yes
- No

### 12.1.13 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

12.1.14 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 12.2: MICROBIOLOGY - THIRD BABY

12.2.1 Blood culture (if taken)
Please complete table if applicable:

<table>
<thead>
<tr>
<th>Age</th>
<th>Organism</th>
<th>Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12.2.2 Lumbar puncture (if taken)
Please complete table if applicable:

<table>
<thead>
<tr>
<th>Age</th>
<th>Organism</th>
<th>Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Definitions of Maternal Morbidity (Section 8.4)

<table>
<thead>
<tr>
<th>No.</th>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Major obstetric haemorrhage</td>
<td>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)</td>
</tr>
<tr>
<td>2</td>
<td>Uterine rupture</td>
<td>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)</td>
</tr>
<tr>
<td>3</td>
<td>Peripartum hysterectomy</td>
<td>Peripartum hysterectomy</td>
</tr>
<tr>
<td>4</td>
<td>Eclampsia</td>
<td>Seizure associated with antepartum, intrapartum or postpartum symptoms and signs of pre-eclampsia</td>
</tr>
<tr>
<td>5</td>
<td>Renal or liver dysfunction</td>
<td>Acute onset of biochemical disturbance, urea &gt;15mmol/l, creatinine &gt;400mmol/l, AST/ALT &gt;200u/l</td>
</tr>
<tr>
<td>6</td>
<td>Pulmonary oedema</td>
<td>Clinically diagnosed pulmonary oedema associated with acute breathlessness and O₂ saturation &lt;95%, requiring O₂, diuretics or ventilation</td>
</tr>
<tr>
<td>7</td>
<td>Acute respiratory dysfunction</td>
<td>Requiring intubation or ventilation for &gt;60 minutes (not including duration of general anaesthetic)</td>
</tr>
<tr>
<td>8</td>
<td>Pulmonary embolism</td>
<td>Increased respiratory rate (&gt;20/min), tachycardia, hypotension. Diagnosed as “high” probability on V/Q scan or positive spiral chest CT scan. Treated by heparin, thrombolysis or embolectomy</td>
</tr>
<tr>
<td>9</td>
<td>Cardiac arrest</td>
<td>No detectable major pulse</td>
</tr>
<tr>
<td>10</td>
<td>Coma</td>
<td>Including diabetic coma. Unconscious for &gt;12 hours</td>
</tr>
<tr>
<td>11</td>
<td>Cerebro-vascular event</td>
<td>Stroke, cerebral/cerebellar haemorrhage or infarction, subarachnoid haemorrhage, dural venous sinus thrombosis</td>
</tr>
<tr>
<td>12</td>
<td>Status epilepticus</td>
<td>Constant or near constant state of having seizures that last 30mins or more</td>
</tr>
<tr>
<td>13</td>
<td>Septicaemic shock</td>
<td>Despite fluid resuscitation: MAP &lt;65mmHg or Systolic BP &lt;90mmHg or Lactate &gt;4mmol/L</td>
</tr>
<tr>
<td>14</td>
<td>Anaesthetic problem</td>
<td>Aspiration, failed intubation, high spinal or epidural anaesthetic</td>
</tr>
<tr>
<td>15</td>
<td>ICU/CCU admission</td>
<td>Unit equipped to ventilate adults. Admission for one of the above problems or for any other reason. Includes CCU admissions</td>
</tr>
<tr>
<td>16</td>
<td>Other severe morbidity</td>
<td>Other severe morbidity, e.g. amniotic fluid embolism</td>
</tr>
<tr>
<td>17</td>
<td>Interventional radiology</td>
<td>Received planned (a) or unplanned (b) interventional radiology</td>
</tr>
<tr>
<td>CATEGORY OF PLACENTAL PATHOLOGY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NO ABNORMAL HISTOLOGY REPORTED</td>
<td>No abnormal pathology reported.</td>
<td></td>
</tr>
<tr>
<td>CHORIOAMNIONITIS</td>
<td>Please specify if the finding of chorioamnionitis was reported as mild, moderate or severe.</td>
<td></td>
</tr>
<tr>
<td>FETAL VASCULITIS</td>
<td>Please specify if the finding of fetal vasculitis was arterial, venous or in both vessels.</td>
<td></td>
</tr>
</tbody>
</table>
| 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.