NATIONAL PERINATAL EPIDEMIOLOGY CENTRE

NPEC Reference Number

_____

(As issued from the NPEC online database)

AUDIT OF
PULMONARY EMBOLISM (PE)
during pregnancy or within 42 days of the pregnancy end.
Notification Form 2018

Name of Maternity Hospital _____

Completed by _____
(Please print name and staff grade)

Contact email _____**Contact telephone number**

Date of Notification: ☐☐/☐☐/☐☐

When did the PE occur? Antenatal ☐ Intrapartum ☐ Postnatal ☐

The NPEC is sincerely grateful for your contribution to this audit

Please return completed forms to E Manning, National Perinatal Epidemiology Centre
5th Floor, Cork University Maternity Hospital, Wilton, Cork T12YEO2

Should you have any queries regarding this form, please do not hesitate to contact Edel Manning by phone: 021 4205042 or by email: e.manning@ucc.ie

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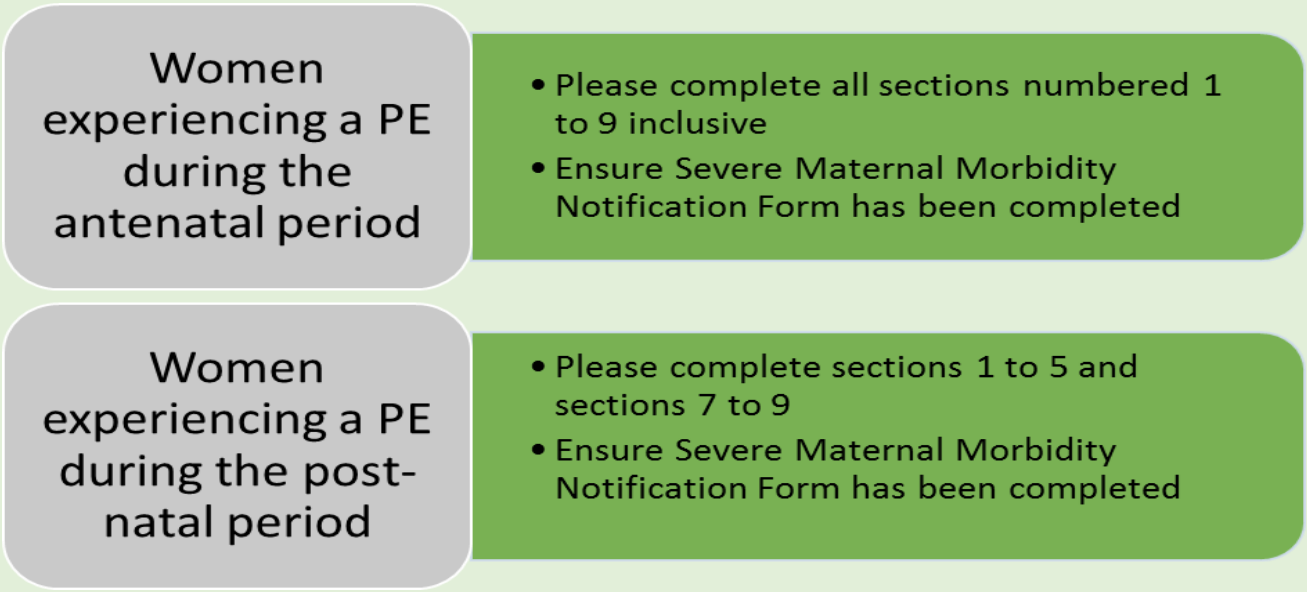
Information for completing this form

- **Inclusion criteria:**
  All women experiencing a pulmonary embolism while pregnant or within 42 days of the pregnancy end*. (*Includes giving birth, ectopic pregnancy, miscarriage or termination of pregnancy).

- **Case criteria for PE audit: please tick the relevant case type in the table below:**

PE confirmed using suitable imaging (e.g. CTPA)	
PE confirmed at postmortem	
Diagnosis of PE based on symptoms consistent with PE and the patient has received a course of anticoagulation therapy (> 1 week)	

- Relevant sections to be completed for PE occurring in both the antenatal and postnatal period are outlined in the diagram below:



- Please complete all dates in the format DD/MM/YY, and all times using the 24 hour clock e.g. 12.05

- If codes or examples of relevant conditions are required, some lists (not exhaustive) are included on the back page (pg12) for your reference.

- **Please ensure that a Severe Maternal Morbidity (SMM) Notification Form is completed and submitted (either online to the NPEC database or on hardcopy to the NPEC) with this booklet**. The rationale for completing the SMM notification form is to advise on delivery and neonatal outcome details.

Thank you very much for taking the time to complete this form.

SECTION 1. WOMANS' DETAILS

1.1. Mother's age ☐☐

1.2. Ethnic group (enter code, please see *1 page 12 for guidance) ☐

1.3. Height at booking (round up to the nearest cm): ☐☐☐

1.4. Weight at booking (round up to the nearest kg) ☐☐.☐

If weight is unavailable, was there evidence that the woman was too heavy for hospital scales? ☐ Yes ☐ No

1.5. Body Mass Index at booking (BMI): ☐☐.☐

1.6. Smoking status: **Never** ☐ **Gave up during pregnancy** ☐ **Current** ☐

SECTION 2. PREVIOUS PREGNANCIES

2.1 **Parity (status prior to delivery)** ☐☐ + ☐

2.2 Were there any previous pregnancy problems? *(For guidance please see*2 page 12)* ☐ Yes ☐ No

IF YES, please specify details_____

_____

_____

SECTION 3. PREVIOUS MEDICAL HISTORY

3.1. Were there any pre-existing medical problems? *(For guidance please see*3 page 12)* ☐ Yes ☐ No ☐ Unknown

If yes, please specify_____

_____

3.2. Is there a history of thrombosis in first degree relatives? ☐ Yes ☐ No ☐ Unknown

3.3. Does the woman have a known thrombophilia? (*For guidance please see*4 page 12)* ☐ Yes ☐ No ☐ Unknown

If yes, please specify condition_____

_____

3.4 Does the woman have a past history of thrombosis? ☐ Yes ☐ No ☐ Unknown

IF YES, please specify whether the thrombosis occurred in a previous pregnancy or when not pregnant

3.4 (a) In previous pregnancy ☐ **3.4 (b) When not pregnant** ☐

3.5. Does the woman have a history of recreational drug use? ☐ Yes ☐ No

3.6. Did this woman have a pre-conceptual assessment for VTE? ☐ Yes ☐ No ☐ Unknown

3.6 (b) IF YES, was there a documented management plan for the woman's pregnancy? ☐ Yes ☐ No

SECTION 4. THIS PREGNANCY

4.1 Gestation at first booking appointment: ☐☐ weeks + ☐ days ☐ Not booked ☐ Unknown

4.2 (a) Was a risk assessment for VTE documented at booking visit? ☐ Yes ☐ No

4.2 (b) IF YES, was the woman identified as 'high risk' for VTE? ☐ Yes ☐ No

4.2 (c) IF identified as 'high risk' for VTE, was the woman referred to:

Combined obstetric/haematology care? ☐ Yes ☐ No

4.3 (a) Was the woman on prophylactic anti-thrombotic or antiplatelet therapy during this pregnancy?

☐ Yes ☐ No

4.3 (b) If yes, please specify indication for therapy (e.g. recurrent miscarriage, *For guidance please see *2,3 and 4 page 12)*

_____

4.3 (c) If yes, please specify drug _____

4.4 Did this woman have varicose veins? ☐ Yes ☐ No

4.5 (a) Were there any other complications during this pregnancy ☐ Yes ☐ No

*(For guidance please see*3 page 12)*

4.5 (b) If yes, please specify_____

_____

4.6 (a) . Did the woman have surgery in the 3 months prior to her PE? ☐ Yes ☐ No

4.6 (b) If yes please specify surgery_____

Date of surgery: ☐☐/☐☐/☐☐

4.7. Did the woman have a significant injury in the 3 months prior to her PE? ☐ Yes ☐ No

*(For guidance please see*5 page 12)*

4.8. Was there a history of a long-haul flight (4 hours or more) travel in the 3 months prior to her PE?

☐ Yes ☐ No ☐ Unknown

4.9 (a) Was there a period of hospitalisation/ bed rest (4 days or more) during this pregnancy?

☐ Yes ☐ No

4.9. (b) If YES, please specify:

Number of admissions ☐☐ Date of most recent admission ☐☐/☐☐/☐☐

4.9. (c) Was a reassessment for VTE risk documented at every episode of hospitalisation? ☐ Yes ☐ No

4.10 (a) Did this woman have a thrombotic event (e.g. DVT) during this pregnancy prior to her PE? ☐Yes ☐ No

4.10 (b) **IF YES**, please specify date of event ☐☐/☐☐/☐☐

4.11 (a) Did the woman have a leg Doppler scan? ☐Yes ☐ No

4.11 (b) **IF YES**, was this positive for DVT ☐Yes ☐ N

4.11 (c) Were TED stockings applied? ☐Yes ☐ No

4.11 (d) Please specify the anticoagulation treatment for this DVT in the table below

	Name of drug	Dose and units	Schedule	Date commenced and completed
Low molecular weight heparin ☐				**Commenced** ☐☐/☐☐/☐☐ **Completed:** ☐☐/☐☐/☐☐
Unfractionated heparin ☐				**Commenced** ☐☐/☐☐/☐☐ **Completed:** ☐☐/☐☐/☐☐
Warfarin ☐				**Commenced** ☐☐/☐☐/☐☐ **Completed:** ☐☐/☐☐/☐☐
Other ☐				**Commenced** ☐☐/☐☐/☐☐ **Completed:** ☐☐/☐☐/☐☐

4.11 (e) Was the women provided with education on the importance of thromboprophylaxis?

☐ Yes ☐ No ☐Unknown

SECTION 5. DELIVERY DETAILS FOR ALL CASES OF PE WHETHER OCURRING DURING THE ANTENATAL OR POST NATAL PERIOD

5.1 Date of delivery: ☐☐/☐☐/☐☐ **Time:** ☐☐:☐☐

5.2 Gestation at delivery/pregnancy end ☐☐weeks + ☐days

5.3 Place of delivery: Name of hospital _____

5.4 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

5.5 What was the estimated blood loss at delivery? ☐☐☐☐ mls

5.6 Was a reassessment for VTE risk documented post-delivery? ☐ Yes ☐ No

5.7 (a) Was the woman discharged home post-delivery? ☐ Yes ☐ No

5.7 (b) If yes, please specify date of discharge ☐☐/☐☐/☐☐

CAESAREAN SECTIONS ONLY

If delivered by caesarean section, please state:

5.8 Grade of urgency (*For guidance please see*6 page 12*) ☐

5.9 Indication for caesarean section: _____

5.10 Method of anaesthesia: **GA** ☐ **Epidural** ☐ **Spinal** ☐

Combined Epidural/Spinal ☐ **None** ☐

5.11 Were TED / anti-emboli stockings applied post caesarean section? ☐Yes ☐ No

5.12 (a) Was a pre delivery maternal weight documented? ☐ Yes ☐ No

5.12 (b) IF YES, please specify weight and date of measurement:

Weight = ☐☐☐Kg Date weight was recorder on ☐☐/☐☐/☐☐

5.13 (a) Was prophylactic anticoagulation used post caesarean section? ☐Yes ☐ No

5.13 (b) IF YES, please specify drug(s) used in table below:

	Name of drug	Dose and units	Schedule	Date and time
Low molecular weight heparin ☐				**Commenced** ☐☐/☐☐/☐☐ **Time** ☐☐:☐☐
Other ☐				**Commenced** ☐☐/☐☐/☐☐ **Time** ☐☐:☐☐

5.14 Please specify the planned duration of anticoagulation treatment following caesarean section ☐☐weeks + ☐☐ days

5.15 If the woman did not receive prophylactic anticoagulation therapy used post caesarean section, please specify reason for withholding treatment

_____

5.16 Were there any complications post caesarean section (e.g.) wound infection? ☐ Yes ☐ No

IF YES, please specify_____

5.17 Did the woman receive education on the importance of postpartum VTE signs and symptoms on discharge from hospital? ☐ Yes ☐ No

5.18 For what time period was the woman advised to wear TED/ anti- emboli stockings post caesarean?

☐☐ weeks ☐ Unknown

SECTION 6. ANTI- COAGULATION TREATMENT DURING LABOUR / DELIVERY (FOR WOMEN EXPERIENCING A PE IN THE ANTENATAL PERIOD ONLY)

6.1 Was the timing of delivery planned? ☐ Yes ☐ No
(e.g. induction of labour, or elective caesarean section)

6.2 Was an individualised delivery care plan documented ☐ Yes ☐ No

6.3 When was the last therapeutic dose of heparin given prior to delivery? Date: ☐☐/☐☐/☐☐

Time: ☐☐:☐☐

6.4 Onset of Labour **Spontaneous** ☐ **Induced** ☐ **Never in labour** ☐

6.5 What type of analgesia used in labour:
Please tick all that apply

Entonox ☐ Pethidine ☐ Epidural ☐ Spinal ☐ None ☐

☐ Other, please specify_____

6.6 Was the use of regional anaesthesia contraindicated in labour or at operative delivery? Yes ☐ No ☐

6.7 (a) Was the therapeutic dose of anticoagulation drug altered to prophylactic levels around the time of delivery?

No ☐ Yes, before delivery ☐ Yes, after delivery ☐

6.7 (b) If the therapeutic dose of anticoagulation drug was altered to prophylactic levels around the time of delivery, please specify the number of days prophylactic levels were used: ☐☐

SECTION 7. PULMONARY EMBOLISM (PE) EVENT

7.1 Date and time of PE event: Date: ☐☐/☐☐/☐☐ Time:☐☐:☐☐

7.2 Location of maternal care during PE: Name of hospital _____
Please tick all that apply

On the ward ☐ Delivery Suite ☐ Theatre ☐ High dependency unit ☐ ICU/CCU ☐

A & E ☐ Home ☐ Other ☐ please specify_____

7.3 (a) **Was the woman on prophylactic anti-thrombotic or antiplatelet therapy during this pregnancy?**

☐ **Yes** ☐ **No**

7.3 (b) If yes, please specify indication for therapy (*For guidance please see *2,3 and 4 page 12)*
_____

7.3 (c) If yes, please specify drug _____

PRESENTING SYMPTOMS

7.4 Did the woman have any of the following presenting symptoms?

(Please tick all that apply)

Pleuritic chest pain ☐ Other (non-pleuritic) chest pain ☐

Shortness of breath on exertion ☐ Shortness of breath at rest ☐

Haemoptysis ☐ Other productive cough ☐

Palpitations ☐ Syncope ☐

Other symptoms ☐ please specify_____

None of the above, PE detected as an incidental finding ☐ Unknown ☐

7.5 Presenting physiological parameters:

Heart rate (beats/min) ☐☐☐ Unknown ☐

Respiratory rate (rate / min) ☐☐☐ Unknown ☐

Oxygen saturation on room air (%) ☐☐☐ Unknown ☐

Systolic/Diastolic blood pressure (mmHg) ☐☐☐ / ☐☐☐ Unknown ☐

Temperature (Celsius) ☐☐ ☐ Unknown ☐

Were there clinical signs of DVT? ☐Yes ☐ No Not recorded ☐

7.6 What were the results of an ECG? Normal ☐ Abnormal ☐ Not performed ☐

7.7 What were the results of an Echocardiograph? Normal ☐ Abnormal ☐ Not performed ☐

7.8 Did the woman require cardiopulmonary resuscitation (CPR)? ☐Yes ☐ No

7.9 Did the woman require intubation or ventilation for >60 minutes* ☐Yes ☐ No
(*not including duration of general anaesthetic)

7.10 (a) Was a D-Dimer performed? ☐Yes ☐ No Unknown ☐

7.10 (b) IF YES, what was the result: Normal ☐ Abnormal ☐
Please specify Level (ng/ml) _____

7.11 What was the working diagnosis after the initial clinical assessment? (please complete in box below)

Clinical diagnosis:

DIAGNOSIS OF PE

7.12 (a) Was imaging undertaken to confirm PE? ☐Yes ☐ No

7.12 (b) Please give details of <u>ALL</u> investigations performed in the table below:

Test performed	Did the test confirm the diagnoses?		*. Please indicate whether High or Low probability		Findings
	Yes	No	High	Low	
CTPA ☐					
VQ ☐					
Chest XRay ☐					
MRI ☐					
Leg Doppler scan ☐					
Other ☐					

TREATMENT DURING PE EVENT

7.13 Was therapeutic anticoagulation used? ☐ Yes ☐ No

7.14 (a) Was therapeutic anticoagulation treatment started before or after investigations for PE?

☐ Before ☐ After ☐ Unknown

7.14 (b) Please specify therapeutic anticoagulation drug(s) used below in table below

	Name of drug	Dose and units	Schedule	Date and time Started
Low molecular weight heparin ☐				☐☐/☐☐/☐☐ **Time** ☐☐:☐☐
Unfractionated heparin ☐				☐☐/☐☐/☐☐ **Time** ☐☐:☐☐
Warfarin ☐				☐☐/☐☐/☐☐ **Time** ☐☐:☐☐
Other ☐				☐☐/☐☐/☐☐ **Time** ☐☐:☐☐

7.15 Please specify <u>the planned duration</u> of anticoagulation treatment post PE ☐☐ weeks + ☐☐ days

7.16 Was therapeutic anticoagulation treatment started before or after investigations for PE? ☐ Before ☐ After

7.17 (a) Was any other medication given? ☐ Yes ☐ No

7.17 (b) IF YES, please specify drug(s) used_____

7.18 (a) Was the PE managed with surgery? ☐ Yes ☐ No

7.18 (b) IF YES, please give details of surgery_____

SPECIALIST REVIEW:

7.19 (a) Was the woman reviewed by a non-obstetric medical specialist? Yes ☐ No ☐

(If yes, please tick all that apply)

7.19 (b) Haematologist ☐ Anaesthetist ☐ Critical Care Intensivist ☐

Physician ☐ Cardiologist ☐ Other ☐ (Please specify speciality) _____

7.20 If the woman was treated for a PE in another hospital, did your maternity unit receive a written summary of care given and a care plan for the woman? Yes ☐ No ☐ Not applicable ☐

SECTION 8. MATERNAL CARE AND OUTCOME FOLLOWING PE EVENT

8.1 Admission to ICU/CCU: ☐ Yes ☐ No

If yes, duration of ICU care in days/ part days ☐☐:☐
(e.g. 1.5 days)

8.2 (a) Did any other maternal morbidity occur? *(For guidance please see*7 page///)* ☐ Yes ☐ No

8.2 (b) IF YES, please specify morbidity_____

_____

8.3 Date of discharge home following PE event ☐☐/☐☐/☐☐

8.4 (a) **Maternal Death:** ☐ Yes ☐ No

8.4 (b) IF YES, please specify date and time of death Date: ☐☐/☐☐/☐☐ **Time:** ☐☐:☐☐

8.5 (a) Was a post mortem performed ☐ Yes ☐ No ☐ Not applicable

8.5 (b) IF YES, What was the primary cause of death as stated on the post mortem? _____
_____

SECTION 9. Addition relevant information

9.1 Please use this space to enter any other relevant information you feel may be important

DEFINITIONS

1. **Coding for ethnic group**:
1. White Irish
2. Irish Traveller
3. Any other white background
4. Asian or Asian Irish
5. Black or Black Irish
6. Any including mixed ethnic group - please specify---
7. Not recorded

2. Previous or current pregnancy problems, including:
Hyperemesis requiring admission
Dehydration requiring admission
Ovarian hyperstimulation syndrome
Systemic infection
Sickle cell anaemia
3 or more miscarriages
Preterm birth or mid trimester loss
Stillbirth
Early or late neonatal death
Baby with a major congenital abnormality
Fetal growth restriction (FGR)
Infant requiring intensive care
Previous caesarean section
Thrombotic event
Amniotic fluid embolism
Pre/Eclampsia
Placenta praevia
Gestational diabetes
Significant placental abruption
Post-partum haemorrhage requiring transfusion
Puerperal psychosis
Significant post natal depression
Surgical procedure in pregnancy
Severe infection e.g. pyelonephritis

3. Previous or pre-existing maternal medical problems, including:
Cardiac disease
Essential Hypertension (not pregnancy related)
Renal disease
Neurological disorders
Endocrine disorders
Autoimmune diseases:
Inflammatory Bowel Disease
Cancer
Infectious disease (e.g. HIV,TB)
Psychiatric disorders
Diabetes
Paraplegia
Haematological disorders:
Sickle cell disease
Polycythaemia
Essential thrombacthaemia
Myeloproliferative disorder

4. Disorders with associated thrombophilia, including:
Antiphospholipid syndrome
Antithrombin deficiency
Factor V Leiden
Persisting antiphospholipid antibodies (lupus anticoagulant and/or anticardiolipin antibodies and/ or anti-beta2-glycoprotein I antibodies present on two occasions more than 12 weeks apart)
Protein C deficiency
Protein S deficiency
Prothrombin gene-variant

5. Definition of 'significant injury'
Any injury which has impaired normal function of daily living for a week or more

6.RCOG Classification for urgency of caesarean section:
1. Immediate threat to life of woman or fetus
2. Maternal or fetal compromise which is not immediately life-threatening
3. Needing early delivery but no maternal or fetal compromise
4. At a time to suit the woman and maternity team

7. Major maternal morbidity, including:
Post partum haemorrhage ≥ 1,000 mls
Major obstetric haemorrhage (Estimated blood loss ≥ 2500ml, or transfused 5 or more units of blood or received treatment for coagulopathy)
Disseminated intravascular coagulopathy
Uterine rupture
HELLP
Eclampsia
Thrombotic event
Septicaemia
Peripartum hysterectomy
Renal failure
Pulmonary oedema
Acute respiratory dysfunction requiring ventilation
Cardiac arrest
Cerebrovascular accident
Persistent vegetative state
Septicaemia
Required ventilation
Renal failure
Mendleson's syndrome