



AUDIT OF PULMONARY EMBOLISM (PE) during pregnancy or within 42 days of the pregnancy end. Notification Form 2019

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

Table of contents	Page
Instructions for completing form.....	2
Section 1: Woman's details.....	3
Section 2: Previous pregnancies.....	3
Section 3: Previous medical problems.....	3
Section 4: This pregnancy.....	4 - 5
Section 5: Delivery details (antenatal and post-natal PE).....	5 - 7
Section 6: Anticoagulation treatment during labour (antenatal PE only).....	7
Section 7: Pulmonary Embolism (PE) event.....	8 -10
Section 8: Maternal outcome following PE event.....	11
Section 9: Additional relevant information.....	11

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:

Women experiencing a PE during the antenatal period

- Please complete all sections numbered 1 to 9 inclusive
- Ensure Severe Maternal Morbidity Notification Form has been completed

Women experiencing a PE during the post-natal period

- Please complete sections 1 to 5 and sections 7 to 9
- Ensure Severe Maternal Morbidity Notification Form has been completed

- 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 <input type="checkbox"/>				Commenced <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> Completed: <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/>
Unfractionated heparin <input type="checkbox"/>				Commenced <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> Completed: <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/>
Warfarin <input type="checkbox"/>				Commenced <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> Completed: <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/>
Other <input type="checkbox"/>				Commenced <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> Completed: <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/>

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 OCCURRING 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 Commenced
Low molecular weight heparin <input type="checkbox"/>				<input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> Time <input type="checkbox"/> <input type="checkbox"/> : <input type="checkbox"/> <input type="checkbox"/>
Other <input type="checkbox"/>				<input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> Time <input type="checkbox"/> <input type="checkbox"/> : <input type="checkbox"/> <input type="checkbox"/>

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 ALL 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 <input type="checkbox"/>					
VQ <input type="checkbox"/>					
Chest XRay <input type="checkbox"/>					
MRI <input type="checkbox"/>					
Leg Doppler scan <input type="checkbox"/>					
Other <input type="checkbox"/>					

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 <input type="checkbox"/>				<input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> Time <input type="checkbox"/> <input type="checkbox"/> : <input type="checkbox"/> <input type="checkbox"/>
Unfractionated heparin <input type="checkbox"/>				<input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> Time <input type="checkbox"/> <input type="checkbox"/> : <input type="checkbox"/> <input type="checkbox"/>
Warfarin <input type="checkbox"/>				<input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> Time <input type="checkbox"/> <input type="checkbox"/> : <input type="checkbox"/> <input type="checkbox"/>
Other <input type="checkbox"/>				<input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> Time <input type="checkbox"/> <input type="checkbox"/> : <input type="checkbox"/> <input type="checkbox"/>

7.15 Please specify the planned duration 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 thrombocytopenia
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 $\geq 1,000$ mls
Major obstetric haemorrhage (Estimated blood loss ≥ 2500 ml, 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
Mendelson's syndrome