Frimley Health NHS Foundation Trust

Thromboprophylaxis and the treatment of venous thromboembolism in pregnancy and the puerperium

Key Points

- Venous thromboembolism (VTE) is the leading cause of maternal mortality with a mortality rate of 2.12 per 100,000 maternities
- All women, regardless of risk factors, should be informed of how to reduce VTE risk, the signs and symptoms of VTE and advised to seek medical attention if these occur
- All women should undergo an assessment of risk factors for VTE: early in pregnancy (at booking) or before pregnancy, within 14 hours of hospital admission, 24 hours after admission if still an inpatient and if the woman develops other problems during pregnancy
- All women should undergo an assessment of risk factors for VTE: at birth, 24 hours after birth, if they develop other problems during or are readmitted postnatally
- All high-risk women requiring thromboprophylaxis from the first trimester should be referred to MAC (WPH) or Triage (FPH) to be commenced on thromboprophylaxis immediately
- LMWH is safe to use in pregnancy & breastfeeding while Warfarin is safe to use in breastfeeding and the postnatal period. Direct oral anticoagulants (DOACs) are contraindicated
- All women on prophylactic and treatment dose LMWH should have a structured management plan documented in the notes to guide practitioners in their ongoing care

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Abbreviations

AES	Anti-embolism stockings
CTPA	CT pulmonary angiogram
DVT	Deep vein thrombosis
ECG	Echocardiogram
JVP	Jugular venous pressure

LMWH	Low molecular weight heparin
PE	Pulmonary embolism
V/Q	Ventilation-perfusion scan
VTE	Venous thromboembolism

Contents

1. Introduction

Venous thromboembolism (VTE) is a significant cause of direct maternal death with a mortality rate of 2.12 per 100,000 maternities[1]. In addition, it is a common cause of significant morbidity; overall risk is 1 in 1000 pregnancies[2]. The latest MBRRACE-UK data brief shows a statistically significant increase in maternal death rates from 11.66 per 100,000 in 2019-21 to 13.56 per 100,000 from 2020-22[1], making VTE the leading cause of maternal mortality at 16%.

Most of the VTEs occur in the antenatal period, with 1 in 4 maternal deaths due to VTE occurring in the first trimester[1].The VTE risk per day, however, is greatest in the postnatal period. Therefore, it is essential that women are risk assessed early in the first trimester and continuously throughout the antenatal & postnatal period.

Obesity is an important risk factor in maternal mortality as 64% of maternal mortalities occurred in women who were overweight or obese[1]. Of the maternal deaths secondary to VTE between 2020-22, 40% occurred in women who were overweight (BMI 25-30) while a further 38% occurred in women who were obese (BMI ≥30)[1]. It is therefore essential that all women are prescribed the correct dose of LMWH based on their weight[3].

1.1 Reducing the risk of VTE

Regardless of their risk of VTE, immobilisation of women during pregnancy, labour and the puerperium should be minimised, and dehydration avoided.

All women, regardless of risk factors, should be informed of the signs and symptoms of VTE and advised to seek medical attention if these occur. This information is available in the maternity notes on the MyFrimleyHeathRecord (MFHR) app.

2. **Antenatal risk assessment-** all women should undergo a VTE risk assessment[3]

When to perform VTE risk assessment antenatally
At pregnancy booking or before pregnancy if known to be high risk e.g. previous VTE
Within 14 hours of admission to the hospital for any reason at any point antenatally
On admission in labour
24 hours after admission if still an inpatient
If the woman develops other problems during pregnancy

The antenatal obstetric risk assessment form should be used (Appendix 1). An up-to-date weight taken within the last 4 weeks should be used when prescribing thromboprophylaxis.

Very high-risk patients include:

- previous VTE
- previous VTE on long term oral or injectable anticoagulation therapy
- previous VTE and antiphospholipid syndrome
- antithrombin deficiency
- Some women with previous recurrent VTE who may require higher doses of LMWH

High risk women should receive pre-pregnancy counselling and should be referred to the antenatal clinic for obstetric-led care and haematology input, where appropriate.

Women who require thromboprophylaxis from the first trimester should be referred as soon as possible to MAC (WPH) or triage (FPH) for review by a senior obstetrician to start thromboprophylaxis immediately while waiting for a clinic review.

3. Postnatal risk assessment- all women should undergo a VTE risk assessment[3]

When to perform VTE risk assessment postnatally
Following delivery
24 hours after birth
If the woman develops other problems during the puerperium e.g., wound infection
If the woman is readmitted during the puerperium

The postnatal obstetric risk assessment form should be used (Appendix 2) and thromboprophylaxis prescribed based on the VTE risk score and recent weight (within 4 weeks).

4. COVID-19

Women with COVID-19 should be advised to stay hydrated and mobile. A clinical VTE risk assessment (in person or by virtual means) should be performed, and thromboprophylaxis considered and prescribed on an individual basis. Thromboprophylaxis should be initiated for pregnant women who are self-isolating as per their VTE risk assessment and risk score[4].

All women admitted with confirmed COVID-19 during pregnancy and within 6 weeks postpartum should be offered thromboprophylaxis during admission (if no contraindications) and for 10 days following discharge. Consideration should be given to extending this until 6 weeks postpartum for women with significant ongoing morbidity.

5. Antenatal and postnatal thromboprophylaxis

Antenatal thromboprophylaxis should begin as soon as possible in pregnancy as the risk of VTE exists from the beginning of the first trimester.

Women without previous VTE and without particular first trimester risk factors or admission to hospital, but with three other risk factors, can start antenatal thromboprophylaxis at 28 weeks of gestation (see Appendix 1).

Postpartum thromboprophylaxis should begin as soon as possible after birth when the risk of immediate postpartum haemorrhage has passed, and regional anaesthesia has not been used[3]. If regional anaesthesia has been administered, then it should be delayed for 4 hours after insertion or removal of the catheter. If there is a bloody tap during epidural needle or catheter placement, thromboprophylaxis should be delayed 24 hours.

Mechanical thromboprophylaxis includes anti-embolism stockings (AES) or intermittent pneumatic compression devices (e.g., Flowtron boots).

Low molecular weight heparin (LMWH) is used for antenatal and postnatal pharmacological thromboprophylaxis. It is safe in pregnancy and breastfeeding. Women should be taught to self-inject LMWH and a competency assessment completed. If the woman prefers, a family member can be taught to inject LMWH.

Monitoring of anti-Xa levels is not required when LMWH is used for thromboprophylaxis[3].

The LMWH of choice for the trust is Dalteparin (Fragmin), however, there is a risk of an allergic reaction in a small number of patients who have a hypersensitivity to latex as the needle shield may contain latex[5]. If prescribing LMWH for these patients, consider the alternative LMWH Enoxaparin (Clexane) or contact a senior obstetrician or pharmacist if unsure.

Women on prophylactic and treatment dose LMWH should have a structured management plan documented in the notes to guide practitioners during the antenatal, intrapartum and postpartum period. This should include clear lines of responsibility to facilitate prescribing thromboprophylaxis when indicated.

5.1 Prophylactic doses of low molecular weight heparin (LMWH) during pregnancy and postnatally

Prophylaxis (based on most recent weight taken within the last 4 weeks)	Dalteparin (Fragmin) according to the risk assessment (Appendices 1 & 2)
Body weight <50 kg	2500 units daily
Body weight 50-90 kg	5000 units daily
Body weight 91-130 kg	7500 units daily
Body weight 131-170kg	10000 units daily
Body weight >170kg	75 units/kg/day

Women with renal impairment may need lower doses of LMWH.
Very high-risk patients may require higher doses of thromboprophylaxis, e.g., 50%, 75% or 100% therapeutic dose or 5000 units 12 hourly for body weight 50-90kg. Dosing should be agreed with a haematologist and anti Xa monitoring should be considered for these women. Currently all women requiring antenatal thromboprophylaxis are referred to the obstetric haematology clinic on the WPH site only.

Women at risk of bleeding antenatally or postnatally, e.g., antepartum haemorrhage, placenta praevia, postpartum haemorrhage, coagulopathy, low platelets should receive mechanical thromboprophylaxis but not LMWH until the immediate risk of haemorrhage has passed.

Warfarin can be used postnatally for women requiring longer than 10 days postnatal thromboprophylaxis if the woman prefers. It is associated with a higher risk of postpartum haemorrhage and perineal haematoma than LMWH and requires regular monitoring. Warfarin is safe in breastfeeding. Women commencing warfarin should continue LMWH until the warfarin is at a therapeutic level and should be referred to the anticoagulation clinic for ongoing monitoring.

Direct oral anticoagulants (DOACs) such as Apixaban, Edoxaban, Rivaroxaban and Dabigatran are contraindicated in pregnancy and in breastfeeding.

6. Care during labour and birth for women on antenatal thromboprophylaxis

Any woman taking antenatal LMWH should be advised that if she has vaginal bleeding or thinks that she is in labour, she should not inject any further LMWH and attend triage for assessment. Her VTE risk should be reviewed by the obstetric team. If she is in established labour no further LMWH should be given until after birth.

Prior to the insertion of an epidural or spinal the anaesthetist should be aware of the time of the last dose of LMWH. To minimise the risk of epidural haematoma regional techniques should not be used until at least 12 hours after the previous prophylactic dose of LMWH or 24 hours after any higher dose of LMWH such as a therapeutic dose.

6.1 Induction of labour

Women coming in for an induction should be advised to stop their prophylactic LMWH the night before induction if they are on a prophylactic dose, i.e., the last dose is the night before the induction date and they omit any morning dose. Very high-risk women, especially if IOL is thought likely to be prolonged, must be discussed with consultant haematologist and consultant obstetrician as prophylaxis may need to continue after the start of IOL.

6.2 Elective Caesarean section

For delivery by elective Caesarean section the woman should receive a thromboprophylactic dose of LMWH on the day before delivery. On the day of Caesarean section, any morning dose should be omitted and the operation performed that morning. Mechanical thromboprophylaxis should be used during the surgery.

The thromboprophylactic dose of LMWH should be continued 4 hours after spinal anaesthetic or removal of epidural catheter and when there is no immediate risk of postpartum haemorrhage.

Thromboembolic disease in pregnancy and the puerperium

7. Signs and Symptoms of VTE

- **Deep vein thrombosis (DVT)**: Leg pain or discomfort, swelling, tenderness, increased temperature and oedema, lower abdominal pain and raised white cell count.
- **Pulmonary embolism (PE)**: Dyspnoea or increasing shortness of breath, dizziness, chest pain, tachycardia in an apyrexial woman, haemoptysis (coughing up blood), faintness, feeling flu-like, raised jugular venous pressure (JVP), focal signs in chest, symptoms and signs of DVT, collapse.
- **Valve Thrombosis**: New onset of cardiorespiratory symptoms and/or absence of valve clicks in women with prosthetic heart valves should prompt careful echocardiography & early review by a senior cardiologist to exclude the possibility of valve thrombosis.
- Thrombosis, particularly in a migratory or unusual location should be fully investigated as it can be an early presenting sign of cancer in pregnancy or postpartum.

7.1 Deep Vein Thrombosis- If a DVT is suspected treatment should be started and the diagnosis should be confirmed by objective testing:

Anticoagulant treatment with LMWH should be commenced until an objective diagnosis is made and continued if the diagnosis is confirmed.

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Clinical decision rules and D-dimer should not be performed or used as decision aids to determine whether pregnant and postpartum women with suspected PE qualify for further investigation[3,6].

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Perform ultrasound (compression duplex scanning).

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If the ultrasound is negative, with a low level of clinical suspicion, discontinue anticoagulant treatment.

↓

If ultrasound is negative, with a high level of clinical suspicion – discontinue anticoagulation and repeat ultrasound after 3 and 7 days

↓

Consider x-ray (venogram) or MRI venography on discussion with a radiologist.

↓

An individual management plan must be documented in the woman's notes.

7.2 Pulmonary embolism- If a PE is suspected, treatment should be started and the diagnosis should be confirmed by objective testing:

Anticoagulant treatment with LMWH should be commenced until an objective diagnosis is made and continued if the diagnosis is confirmed.

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Perform a chest X-ray and ECG

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If the woman also has symptoms of DVT, perform ultrasound (compression duplex scanning). If this is positive, the diagnosis is confirmed and no further investigation is necessary. Continue treatment.

↓

If the ultrasound is negative or not indicated and the chest Xray is normal, perform a CTPA or VQ scan. Informed consent is needed for CTPA because of an increased risk of maternal breast cancer (estimated as 13% increase to the woman's background risk) and for VQ scanning because it may carry a slightly increased risk of childhood cancer (estimated as less than 1 in 30,000). In both cases the absolute risk is small and should be balanced against the importance of objective diagnosis[3].

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CTPA is more readily available at FHFT. If there is uncertainty as to which modality to use, the case must be discussed with a consultant obstetrician and consultant haematologist to avoid delay.

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If the chest Xray is abnormal, CTPA is preferred over VQ scanning

8. Initial treatment for VTE

LMWH is the treatment of choice in pregnancy and the puerperium. It is as effective as and safer than unfractionated heparin in pregnancy. However, if VTE occurs at term, consideration should be given to unfractionated heparin for the peripartum period as it is more easily manipulated and

the time off anticoagulation for birth is more easily controlled. All women who develop VTE during pregnancy must be referred to obstetric haematology clinic so that appropriate management of anticoagulation around delivery can be planned.

Before starting therapeutic LMWH, bloods should be taken for FBC, clotting, urea and electrolytes and liver function tests. Women with renal impairment may need lower doses of LMWH and should be discussed with the obstetric haematology consultant.

Routine measurement of anti-Xa activity for patients on LMWH for treatment of acute VTE are not required unless there are extremes of weight (i.e., <50kg or >90kg) or other complicating factors such as recurrent VTE or renal disease.

Previous advice recommended twice daily treatment dosing but once daily regimes have been shown to be safe.

8.1 Initial treatment doses of low molecular weight heparin (LMWH) during pregnancy and the puerperium

Treatment (based on most recent weight)	Dalteparin (Fragmin)
Body weight <50 kg	5,000 units twice daily or 10,000 units once daily
Body weight 50-69 kg	6,000 units twice daily or 12,000 units once daily
Body weight 70-89 kg	8,000 units twice daily or 16,000 units once daily
Body weight 90-109kg	10,000 units twice daily or 20,000 units once daily
Body weight 110-125kg	12,000 units twice daily or 24,000 units once daily
Body weight >125kg	Discuss with haematologist

9. Massive life-threatening PE in pregnancy

If the patient is haemodynamically compromised, collapsed or shocked, she must be urgently assessed by senior medical staff including a senior obstetrician, physician and radiologist. An urgent portable echocardiogram or CTPA must be performed within 1 hour.

Intravenous unfractionated heparin is the preferred treatment in massive PE with cardiovascular compromise. A treatment regime is detailed in the When to use and how to monitor intravenous unfractionated heparin in adults guideline. Treatment options include thrombolysis, thoracotomy and surgical embolectomy.

If massive PE is confirmed, or in extreme circumstances prior to confirmation, immediate thrombolysis should be considered.

10. Ongoing treatment for VTE

Elevate the leg and apply a graduated elastic compression stocking to reduce oedema. Encourage mobilisation with the compression stocking[3].

A (temporary) caval filter may be required in women with recurrent PE despite satisfactory anticoagulation or where anticoagulation is contraindicated[3]. Such cases must be discussed with consultants in obstetrics, haematology and radiology. If a temporary IVC filter is deemed necessary, arrangements for its removal must be made at the time of insertion.

Continue with therapeutic doses of LMWH during the remainder of the pregnancy and for at least 6 weeks postnatally and until at least 3 months of treatment has been given in total.

Refer the woman to the anticoagulation team for ongoing treatment and monitoring. Women on therapeutic doses of LMWH must be reviewed in obstetric haematology antenatal clinic.

Women at risk of bleeding antenatally or postnatally, e.g., antepartum haemorrhage, placenta praevia, postpartum haemorrhage, coagulopathy, low platelets should be assessed individually and in conjunction with a haematologist. If ongoing anticoagulation is essential, intravenous unfractionated heparin can be used as its half-life is shorter than LMWH and its effects can be more effectively reversed with protamine sulphate.

11. Care during labour and birth for women on treatment for VTE

Women on therapeutic anticoagulation must be referred to obstetric haematology so that a clear plan for managing anticoagulation during labour can be made. Any woman taking antenatal LMWH should be advised that if she has vaginal bleeding or thinks that she is in labour, she should not inject any further LMWH and attend triage for assessment. Her VTE risk should be reviewed by the obstetric team. If she is in established labour, no further LMWH should be given until after birth.

Prior to the insertion of an epidural or spinal the anaesthetist should be aware of the time of the last dose of LMWH. To minimise the risk of epidural haematoma regional techniques should not be used until at least 24 hours after a therapeutic dose of LMWH.

11.1 Induction of labour

Women coming in for an induction should be advised to stop their therapeutic dose LMWH 24hrs before the induction. If in doubt, refer to the haematology plan in the notes for management of therapeutic LMWH in the peripartum period. Delays during induction of labour should be minimised to reduce the time the woman is off anticoagulant treatment. If delivery is delayed >48 hours after IOL, consideration of LSCS should be given.

11.2 Elective Caesarean section

For delivery by elective Caesarean section the woman should receive the last dose of LMWH on the morning of the day before delivery. On the day of Caesarean, the morning dose should be omitted and the operation performed that morning, 24 hours after the last dose.

Postpartum LMWH should resume as soon as possible after birth when the risk of immediate postpartum haemorrhage has passed. If regional anaesthesia has been administered then it should be delayed for 4 hours after insertion or removal of the catheter. After Caesarean section, the **prophylactic** dose of LMWH can be given three hours post-delivery (or four hours after removal of the epidural catheter, if appropriate) and the **therapeutic** dose resumed that evening.

12. Postnatal treatment of VTE

Anticoagulant therapy should be continued for at least six weeks postpartum, and until at least three months of anticoagulant therapy has been given in total[3].

The woman should be offered the choice of LMWH or warfarin for postnatal therapy as both are safe in breastfeeding and the postnatal period. The discussion should include the need for regular blood tests for warfarin, particularly in the first ten days of treatment[3].

Postpartum warfarin should be avoided until the fifth postnatal day (longer if the woman is at risk of postpartum haemorrhage)[3]. DOACs are contraindicated in breastfeeding patients.

13. Auditable Standards

- The performance of antenatal risk assessment at the appropriate times
- The performance of postnatal risk assessment at the appropriate times
- The correct dose of LWMH for the woman's weight

14. Monitoring compliance

This guideline will be subject to three yearly audits. The audit midwife is responsible for coordinating the audit. Results will be presented to the departmental clinical audit meeting. Action plans will be monitored at the obstetrics and gynaecology clinical governance committee

References

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Appendix 1 – Antenatal risk assessment for venous thromboembolism
(based on RCOG guidelines)

Name …….…… Hospital number …….. NHS number……

Antenatal risk assessment for venous thromboembolism (based on RCOG guidelines)

Risk assessment to be completed at:

▫Booking ▫On each admission ▫Within 14 hours of admission ▫24 hours after admission ▫With any illness

Date of assessment	
Any previous VTE except a single event related to major surgery	
Hospital admission with no active bleeding and low chance of labour	
Single previous VTE related to major surgery	
High risk thrombophilia & no VTE (antithrombin deficiency, protein S or C deficiency, compound or homozygous from low risk thrombophilias)	
Medical co-morbidities e.g. heart or lung disease, SLE, cancer, inflammatory conditions, nephrotic syndrome, sickle cell disease, intravenous drug user	
Surgical procedure e.g. appendicectomy	
Ovarian hyperstimulation syndrome (first trimester only)	
Age >/=35	
Obesity (BMI ≥ 30kg/m²)	
Obesity (BMI ≥ 40kg/m²) counts as **2 risk factors**	
Parity >/=3	
Smoker	
Gross varicose veins	
Immobility e.g. paraplegia, SPD, long distance travel (>/= 4 hours)	
Pre-eclampsia	
Family history of unprovoked or oestrogen provoked VTE in a first degree relative	
Low risk thrombophilia (heterozygous for factor V Leiden or prothrombin G20210A mutations)	
Multiple pregnancy	
IVF or assisted reproductive therapy	
Transit risk factors (score 1 for each): - Dehydration/Hyperemesis - Current systemic infection - Long-distance travel	
Overall assessment: High Intermediate Low	

→ HIGH RISK
Requires AN prophylaxis with dalteparin.
Refer to obstetrician & obstetric haematology clinic.

NB: All women requiring thromboprophylaxis from the first trimester should be referred at booking to MAC (WPH) or Triage (FPH) to commence thromboprophylaxis

→ INTERMEDIATE RISK
Refer to obstetrician & obstetric haematology clinic
Consider antenatal prophylaxis with dalteparin (and AES* if inpatient).

*Anti-embolism stockings

4 or **more** risk factors
Antenatal prophylaxis with dalteparin from the first trimester.
3 or **more** risks factors
Antenatal prophylaxis with dalteparin from 28 weeks.

2 or less risk factors
↓
LOWER RISK
Mobilisation and avoidance of dehydration
Consider AES

Antenatal indications for AES/**SCD****:
- Hospitalised and LMWH contraindicated
- Previous PE
- Air travel of more than 4 hours duration

Contraindications for AES/**SCD:**
- Leg/foot ulceration or peripheral neuropathy
- Massive leg oedema or leg abnormality
- Peripheral vascular disease
- Cardiac failure
- Known allergy to material of AES
- Recent skin graft/fragile 'tissue paper' skin

**Sequential compression device

Name …….…… Hospital number …….. NHS number……

Appendix 2 – Postnatal risk assessment for venous thromboembolism
(based on RCOG guidelines)

Name …….. Hospital number …….. NHS number……

Postnatal risk assessment for venous thromboembolism (based on RCOG guidelines)

Risk assessment to be completed at:

● At birth (all modes of birth including C-sections) ● Within 14 hours of admission ● Repeat 24 hours later ● Hospital stay >72 hours

Date of assessment	
Any previous VTE	
Anyone requiring antenatal prophylactic LMWH	
High risk thrombophilia (antithrombin deficiency, protein S or C deficiency, compound or homozygous from low risk thrombophilias)	
Low risk thrombophilia + family history	
Caesarean section in labour (**2 risk factors**)	
BMI ≥ 40kg/m² (**2 risk factors**)	
Prolonged hospital admission or readmission >72 hours	
Any surgical procedure in the puerperium except immediate repair of the perineum	
Medical co-morbidities e.g. heart or lung disease, SLE, cancer, inflammatory conditions, nephrotic syndrome, sickle cell disease, IV drug user	
Age >/= 35 years	
Obesity (BMI ≥ 30kg/m²)	
Parity >/= 3	
Smoker	
Elective Caesarean section	
Family history of VTE	
Low risk thrombophilia (heterozygous for factor V Leiden or prothrombin G20210A mutations)	
Gross varicose veins	
Immobility e.g. paraplegia, SPD, long distance travel (>4hours)	
Pre-eclampsia	
Current systemic infection	
Multiple pregnancy	
Preterm delivery <37 weeks in this pregnancy	
Stillbirth in this pregnancy	
Operative delivery	
Prolonged labour (>24 hours)	
PPH >1L or blood transfusion	
Overall assessment: High Intermediate Low	

HIGH RISK
At least 6 weeks prophylactic dalteparin and AES*

*Anti-embolism stockings

INTERMEDIATE RISK
At least 10 days postnatal prophylactic dalteparin (and AES while inpatient).

NB: If persisting >3 risk factors, consider extending thromboprophylaxis with LMWH

2 or more risk factors

1 or no risk factors

LOWER RISK
Early mobilisation and avoidance of dehydration
+
Consider AES

Postnatal indications for AES/SCD**:
- Hospitalised and LMWH contraindicated

Contraindications for AES/**SCD:**
- Leg/foot ulceration or peripheral neuropathy
- Massive leg oedema or leg abnormality
- Peripheral vascular disease
- Cardiac failure
- Known allergy to material of AES
- Recent skin graft/fragile 'tissue paper' skin

**Sequential compression device

Name …….. Hospital number …….. NHS number……

Full version control record

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This guideline has been registered with the trust. However, clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician. If in doubt, contact a senior colleague or expert. Caution is advised when using guidelines after the review date.

This guideline is for use in Frimley Health Trust hospitals only. Any use outside this location will not be supported by the Trust and will be at the risk of the individual using it.

Version History

Version	Date	Guideline Lead(s)	Status	Comment
1.0	Sep 2015	Alison Kirkpatrick, Abdul Wagley, Maria Thomsen	Final	Joint guideline development
2.0	Jan 2019	Alison Kirkpatrick	Final	Review and update. Approved Jan 19
2.1	April 2021	Alison Kirkpatrick	Interim	Amendment as per RCOG. Addition in Appendix 2, removal of Appendix 3.
3.0	April 2022	Alison Kirkpatrick	Final	Cross site
4.0	June 2025	Mr Wenzhuang Chin, Dr Adefunke Adekunle	Final	Scheduled review

Related Documents

Document Type	Document Title
Guideline	When to use and how to monitor intravenous unfractionated heparin in adults