Policy for reducing the risk of Venous Thromboembolism (VTE) in adult patients admitted to hospital

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<td>The Thrombosis Committee</td>
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<tr>
<td>Date ratified</td>
<td>9th April 2014</td>
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<tr>
<td>Document Manager (job title)</td>
<td>Clinical Nurse Specialist – Venous thromboembolism</td>
</tr>
<tr>
<td>Date issued</td>
<td>4th July 2014</td>
</tr>
<tr>
<td>Review date</td>
<td>3rd July 2016</td>
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<td>Electronic location</td>
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Version Tracking

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QUICK REFERENCE GUIDE

For quick reference the guide below is a summary of actions required. This does not negate the need for the document author and others involved in the process to be aware of and follow the detail of this policy.

1. All adult patients admitted to the Trust must be assessed for their risk of VTE and bleeding on admission to hospital

2. All adult patients admitted to hospital must have their risk assessment decision reviewed by a senior clinician (consultant or registrar) within twenty four hours if the patient is still in hospital.

3. All patients must have their risk of VTE and bleeding reassessed if their clinical situation changes

4. All patients must be prescribed VTE prophylaxis in accordance with NICE and Trust guidance as indicated

5. Any deviations from NICE / PHT guidance must be clearly explained to the patient and fully documented in the patient’s medical records.

6. VTE risk assessment must be clearly and fully documented electronically on Vitalpac or on a hard copy of the Trust risk assessment form (appendix 1) according to the protocol for each clinical area

7. Patients must be given written and verbal information on their risk of VTE, methods of prevention and signs and symptoms of DVT and PE on admission and as part of the discharge process

8. No patient should be moved from one clinical area to another unless their VTE risk assessment and documentation is up to date and they have been prescribed appropriate thromboprophylaxis.

9. Patients fitted with antiembolism stockings must have them fitted and monitored in accordance with NICE guidance

10. All DVT or PE confirmed either radiologically or by the mortuary must be reported via the adverse incident reporting system and coded red. Suspected hospital associated VTE events must then be fully investigated according to the TRUST VTE investigation process.

11. All confirmed cases of DVT and PE must be treated according to the Trust Treatment Guidelines
1. INTRODUCTION

Hospital associated VTE has been identified as a major patient safety issue by the Department of Health (DH). Considerable scientific evidence has shown that the introduction of a mandatory VTE programme endorsed through guidance issued by both the National Institute for Health and Clinical Excellence (NICE) and DH can significantly reduce the incidence of hospital associated VTE.

Ensuring that best clinical practice with regards to VTE is followed will potentially reduce both the number and severity of identified hospital associated VTE events across PHT. This in turn will ensure a reduction in associated mortality and morbidity and the associated financial cost to the Trust.

Full implementation of NICE VTE Guidance and Quality Standards and ensuring that every patient undergoes a VTE risk assessment on admission to hospital and is offered NICE compliant thromboprophylaxis where appropriate, will improve patient care and outcomes. Reporting all identified cases of VTE and carrying out root cause analysis on every hospital associated event will ensure that care and service delivery problems are highlighted, education and action points are identified and Trust-wide learning ensues.

2. PURPOSE

This policy aims to ensure that all patients admitted to hospital receive the best evidence based care consistent with NICE VTE Guidelines and Quality Standards. This policy will enable healthcare practitioners to identify patients at risk of developing VTE and select the appropriate therapy, thus reducing the incidence of VTE and the associated mortality and morbidity.

3. SCOPE

3.1 Staff
This policy applies to all permanent, locum, agency and bank staff of Portsmouth Hospitals NHS Trust who are involved in VTE risk assessment, and the prescription and administration of chemical and mechanical thromboprophylaxis.

3.2 Patients
This policy covers all adult patients (18 years and older) admitted to hospital as inpatients or formally admitted to a bed for day case procedures and patients discharged from the Emergency Department (ED) or the Minor Injuries Units (MIU) in a lower limb plaster cast.

3.2.1 Groups that will be covered:
- Surgical inpatients (including day surgery)
- Medical inpatients
- Trauma inpatients
- Cancer inpatients
- Patients undergoing long term rehabilitation in hospital
- Pregnant women admitted to hospital
- Patients discharged from ED of MIU in a lower limb plaster cast

3.2.2 Groups that will not be covered:
- People under the age of 18 years
- People attending the hospital as outpatients

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• People presenting to emergency departments without admission (except patients discharged in a lower limb plaster cast)
• Elderly or immobile people cared for at home, or in a residential care or rest home, unless admitted to hospital.

3.2.3 Healthcare setting

• Secondary care
• Primary care after hospital discharge (selected patients requiring extended, post hospital thromboprophylaxis).

‘In the event of an infection outbreak, flu pandemic or major incident, the Trust recognises that it may not be possible to adhere to all aspects of this document. In such circumstances, staff should take advice from their manager and all possible action must be taken to maintain ongoing patient and staff safety’

4. DEFINITIONS

Antiembolism stockings (AES): stockings providing graduated circumferential compression from the distal to the proximal regions of the leg, they are specifically designed to reduce the risk of DVT

Body mass index (BMI): a measure of body mass calculated on height and weight: Thrombosis risk increases with a BMI > 30 kg/m2)

Deep vein thrombosis (DVT): a thrombus or blood clot partially blocking the deep veins (usually in the lower limb or pelvis)

Exemplar Centre Network: A group of Trusts that have been assessed to have exemplary practice in VTE and provide leadership in VTE care.

Hormone replacement therapy (HRT): system of medical treatment for surgically menopausal, peri-menopausal and, to a lesser extent, menopausal women

International normalized ratio (INR): the standardised laboratory measure of blood coagulation

Intermittent pneumatic compression devices (IPC devices): inflatable garments applied to the foot or the leg which intermittently inflate and deflate enhancing venous return and reducing the risk of DVT

Low molecular weight heparin (LMWH): a class of anticoagulation medication used in the prevention and treatment of blood clots. The LMWH on the Trust formulary is enoxaparin and the standard prophylactic dose is 40mg daily – but see below for suggested obesity doses

Major bleeding: A bleeding event that leads to one or more of the following:

• Death
• A decrease of haemoglobin concentration of >= 2g/dl
• Transfusion of >= 2 units of blood
• Bleeding into a retroperitoneal, intracranial or intraocular site
• A serious or life threatening clinical event
• A surgical or medical intervention

Mechanical prophylaxis: Antiembolism stockings or IPC devices

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Oestrogen containing oral contraceptive pill (COCP)

Post thrombotic syndrome (PTS): a common consequence of DVT causing significant long term morbidity (chronic aching, swelling, skin discoloration and leg ulceration)

Pulmonary embolism (PE): a blood clot blocking the pulmonary arteries

Pulmonary hypertension (PHT): abnormally elevated blood pressure within the pulmonary circuit, a severe consequence of PE associated with significant morbidity and mortality.

Renal failure: an estimated glomerular filtration rate (eGFR) of < 30 ml/min/1.73m2

Significantly reduced mobility: bedbound, unable to walk unaided or likely to spend a substantial proportion of the day in a bed or chair (NICE, 2010)

Unfractionated heparin (UFH): the drug of choice for thromboprophylaxis in patients with renal failure or in patients where rapid reversal of indication may be indicated. The standard dose is 5000iu twice daily but for high risk critical care patients, a dose of 5000iu three times daily may be indicated (see Trust departmental VTE guidelines).

Venous thrombembolism (VTE): the blocking of a blood vessel by a blood clot. It includes both DVT and PE

Weight Adjusted dose LMWH: For patients with a high/low body weight, an adjusted dose of LMWH is often indicated (Body weight > 100kg: 40mg enoxaparin twice daily, Body weight > 150kg: 60 mg enoxaparin twice daily. For patients below 50kg: 20mg enoxaparin once daily) (Kings thrombosis Centre Guidance 2010)

5. DUTIES AND RESPONSIBILITIES

Thrombosis Committee Chair

The Thrombosis Committee Chair is responsible for:
- Providing professional expertise and ensuring that the Trust VTE policy and guidance is consistent with NICE and DH guidance and based on best practice
- Providing leadership within the Trust for VTE prophylaxis and the management of venous thromboembolic disorders
- Being a point of contact for and updating the Trust Executive on all VTE issues within the Trust

The Clinical Nurse Specialist (CNS) for Venous Thromboembolism

The Clinical Nurse Specialist is responsible for:
- Leading the implementation of the VTE policy throughout the Trust;
- Leading and coordinating an audit programme to monitor the effectiveness of the VTE Policy
- Delivering VTE training on the FY1, preceptorship and patient safety and quality teaching programmes.
- Supporting the VTE Link Nurse and providing ward-based training as required
- Ensuring that hospital associated VTE events are appropriately reported and investigated and feeding back to relevant internal and external agencies as required.
- Ensuring the provision of quarterly reports to the Patient Safety Working Group and monthly updates to the Trust Board
- Represent the Trust on the Regional Thrombosis Committee, Exemplar Centre Network and National Nursing and Midwifery Network
Clinical Service Centre (CSC) Chiefs of Service

The CSC Chiefs of Service are responsible for:
- Appointing / designating a VTE Lead for the CSC and/or constituent departments and ensuring that time is made available in their job plan for them to fulfil that role
- Supporting the CSC VTE Leads in their role
- Identifying which clinical staff are responsible for carrying out VTE risk assessments within their CSC
- Ensuring that Trust VTE Policy and Guidance is followed
- Working with the CSC VTE Leads to ensure that VTE risk assessment figures and hospital acquired VTE event figures are monitored within the CSC and ensuring that Contract targets are met

CSC VTE Leads

For CSC VTE Lead responsibilities, see attached Job specification

Medical staff

Medical staff are responsible for:
- Ensuring that they are up to date with VTE training
- Ensuring that patients are assessed for their risk of VTE and bleeding using the Trust risk assessment tool on admission to hospital
- Ensuring that patients have their initial risk assessment decision reviewed by a senior clinician (consultant or registrar) within 24 hours if the patient is still in hospital
- Ensuring that patients are re-assessed for their risk of VTE and bleeding if their clinical situation changes.
- Ensuring that all risk assessments are clearly documented on Vitalpac (in clinical areas without Vitalpac, the risk assessment must be documented on a hard copy of the Trust risk assessment tool and inserted into the patient’s medical notes)
- Ensuring that patients are prescribed VTE prophylaxis consistent with NICE and Trust guidance.
- Ensuring that patients understand their personal risk of VTE and the reasons for their particular management especially if that deviates from standard Trust practice.
- Clearly documenting in the patient’s notes any deviations from NICE and Trust guidance on VTE and the rationale for this deviation
- Taking an active role in the VTE RCA process, as appropriate

VTE Link Nurses

For VTE Link Nurse responsibilities, see attached Job specification

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CSC Heads of Nursing

CSC lead nurses are responsible for:

- Monitoring compliance with VTE risk assessment across the CSC
- Submitting a CSC Implementation Plan outlining how the CSC aims to achieve compliance with the NICE VTE Quality Standards (see 8. External links)
- Supporting line managers to release staff for training/meetings.
- Working directly with line managers to address issues raised by VTE root cause analysis action plans
- Ensuring that all clinical areas have a VTE Link Nurse and supporting them in this role

Registered nursing staff

Registered nursing staff are responsible for:

- Ensuring that they are up to date with VTE training and that their ESR record is updated
- Ensuring that all patients in their care have been assessed for their risk of VTE and bleeding and that this risk assessment is up to date
- Ensuring that VTE documentation on VitalPAC and in the patients notes is accurate and up to date
- Administering both mechanical and chemical VTE prophylaxis as prescribed and ensuring that this is carried out in accordance with NICE and Trust guidance
- Ensuring that all patients receive verbal and written information on their risks of VTE, methods of prevention and signs and symptoms of DVT and PE on admission and as part of the discharge process
- Teaching patients to self administer VTE prophylaxis where appropriate
- Ensure escalation to the medical lead responsible for the patient any omissions in VTE risk assessment and treatment

The Thrombosis Committee:

The Committee Group will, through the VTE CNS provide quarterly reports to the Patient Safety Working Group and will ensure that Trust VTE Guidance is fully implemented, up to date and consistent with NICE / DH guidance.

Governance and Quality Committee

The Committee will receive a quarterly report from the Thrombosis Committee and the VTE Review Group on all matters relating to the Trust’s VTE Strategy.

Patient Safety Working Group

The Group will receive a quarterly report from the VTE CNS and will take any action it feels appropriate in the light of the received reports.

The VTE Review Group:

The Group will monitor the reporting and root cause analysis of hospital associated VTE events and ensure that action and learning points are appropriately disseminated and actioned.

6. PROCESS

6.1 Risk Assessment

6.1.1 All adult patients admitted to the Trust will be assessed for their risk of VTE and bleeding using the Trust VTE risk assessment tool (see appendix 1). The risk assessment will take place on admission or at the Pre-Operative Assessment Clinic (elective surgical patients only).
6.1.1 Patients discharged directly from ED or the MIU in a lower limb plaster cast/immobilization must be assessed using the lower limb plaster cast tool (appendix 2)

6.1.2 Each CSC should outline a clear process for defining who is responsible for carrying out and documenting the VTE risk assessments (medical, nursing or pharmacy staff).

6.1.3 The risk assessment must be documented on VitalPAC. Clinical areas without VitalPAC must fill in a hard copy of the VTE risk assessment tools and file it in the patient’s medical record.

6.1.4 The initial risk assessment should be reviewed by a senior clinician (registrar or consultant) within 24 hours of admission and whenever the clinical situation changes

6.1.5 Patients assessed to be at risk of VTE should be offered thromboprophylaxis that is consistent with NICE and Trust guidelines

6.1.6 Rationale for any deviation from NICE / Trust guidelines must be clearly explained to the patient and fully documented in their medical record

6.1.7 Contraindications to chemical or mechanical prophylaxis must be clearly documented in the patient’s medical record

**6.2 Treatment**

6.2.1 All patients assessed to be at risk of VTE must be prescribed chemical prophylaxis in accordance with Trust Guidelines unless contraindicated

6.2.2 Treatment must continue until discharge or until the patient no longer has significantly reduced mobility (usually at least 5 – 7 days)

6.2.3 Extended chemical thromboprophylaxis (LMWH or Rivaroxaban for example) must be prescribed for the following high risk groups unless there are clearly documented contraindications:

- Total hip replacement (35 days)
- Total knee replacement (14 days)
- Hip fracture (35 days)
- Major pelvic or abdominal surgery for cancer (28 days)
- At risk Day Surgical Patients (5-7 days)
- At risk patients in a lower limb immobilisation (consider prescribing prophylaxis for the duration of plaster cast/boot)

6.2.4 Pre-operative chemical prophylaxis should not be prescribed for patients undergoing elective surgery unless specifically requested by a Consultant. In these cases the planned prophylaxis and the underlying rationale must be clearly documented in the patient’s medical record.

6.2.5 Pre-operative chemical prophylaxis may be appropriate for patients undergoing non-elective / emergency surgery, particularly if the patient is immobilised for a long period prior to the procedure. Careful consideration of the risks and benefits of chemical prophylaxis should be used and the rationale for any decision to prescribe prophylaxis clearly documented in the patient record.
6.2.6 At risk medical patients contraindicated for chemical prophylaxis must have antiembolism stockings fitted on admission to hospital unless contraindicated. Stockings must be fitted and monitored in accordance with NICE guidance (CG92).

6.2.7 At risk surgical patients must have either intermittent pneumatic compression devices or antiembolism stockings fitted prior to surgery; these must be worn until mobilized. Both are not required unless there is a delay in starting chemical prophylaxis or it is contraindicated.

6.2.8 All patients should be adequately hydrated according to their clinical condition.

6.2.9 All patients should be mobilised as early as possible within the limitations of their clinical condition.

6.2.10 Patients diagnosed with a DVT or PE should be treated in accordance with the Trust treatment guidelines.

6.3 Advice

6.3.1 Patients and their carers must be given written and verbal information on VTE on admission and as part of the discharge process. Information should include the risk of VTE, methods of prevention and signs and symptoms of DVT and PE. This information is contained in the Trust patient information leaflet: “Reducing your risk of developing a blood clot while you are in hospital”

There must be clearly documented evidence in the patient’s medical record that this information has been provided.

6.4 If a DVT or PE is suspected

If a DVT or PE is suspected, treatment dose LMWH (UFH in renal failure or if massive PE is suspected) must be commenced immediately unless contraindicated and appropriate investigations requested (refer to the PE and DVT investigation pathways). Should an IVC filter be considered, this should be discussed with the Radiology department.

6.5 Confirmed DVT and PE

6.5.1 Confirmed cases of DVT and PE must be managed according to the Trust VTE Treatment Guidelines.

VTE treatment in adults patients with Enoxaparin

http://pharmweb/publications/guidelines/Venous%20Thromboembolism%20Treatment%20in%20Adult%20Patients%20with%20Enoxaparin.pdf

Warfarin dosing and reversal of excess anticoagulation in adults

http://pharmweb/publications/guidelines/Warfarin%20Dosing%20and%20Reversal%20of%20Excess%20Anticoagulation%20in%20Adults.pdf

Thromboembolic Disease in Pregnancy: Acute Management


Rivaroxaban for the treatment of suspected and confirmed Deep Vein Thrombosis
6.5.2 All cases of DVT or PE confirmed either radiologically or on post mortem must be processed via the Trust VTE Reporting and Investigation process. (see attached process document)

7. TRAINING REQUIREMENTS

As identified in the Trust’s training needs analysis:

Medical Staff

- All junior medical staff must undertake VTE training as part of their induction and every two years thereafter.
- All medical staff must undertake the DH eLearning module every two years.
- All medical staff must undertake local departmental training on the VTE VitalPAC module if appropriate.

Nursing Staff

All trained nurses must:
- Undertake VTE training as part of their induction or preceptorship programmes
- Attend the Patient Safety and Quality Training Day / VTE Essential Update Programme every two years
- If involved in the fitting and monitoring anti-embolism stockings and IPC devices, attend training sessions every two years or whenever a new product is introduced.
- Undertake local departmental training on the VTE VitalPAC module if appropriate.

8. REFERENCES AND ASSOCIATED DOCUMENTATION

Internal Guidelines

- Bridging guidelines for peri-operative management of existing anticoagulation in surgical & invasive procedures (Adults)
  
http://pht/Departments/Pharmacy/Drug%20Therapy%20guidelines/Bridging%20guidelines%20for%20peri-operative%20management%20of%20existing%20anticoagulation%20in%20surgical%20and%20invasive%20procedures%20(Adults).doc

- Venous Thromboembolism and Pulmonary Embolism Prophylaxis for the Department of Critical Care
• Venous Thromboembolism and Pulmonary Embolism Prophylaxis for Medical Patients


• Venous Thromboembolism and Pulmonary Embolism Prophylaxis for Surgical Patients


• Venous Thromboembolism and Pulmonary Embolism Prophylaxis in Orthopaedic patients


• Venous Thromboembolism Prophylaxis in Pregnancy


• DVT and PE Treatment with Enoxaparin

http://pharmweb/publications/guidelines/Venous%20Thromboembolism%20Treatment%20in%20Adult%20Patients%20with%20Enoxaparin.pdf

• Treatment of Superficial thrombophlebitis

http://pharmweb/publications/guidelines/Superficial%20Thrombophlebitis%20Treatment.pdf

• Guidelines for thromboprophylaxis in the Renal Unit: Interim guideline

http://guidance.nice.org.uk/CG92

External

• Venous Thromboembolism: reducing the risk: Reducing the risk of venous Thromboembolism (deep vein thrombosis and pulmonary embolism) in patients admitted to hospital: NICE Clinical Guideline 92, Jan 2010

http://guidance.nice.org.uk/CG92

• Venous Thromboembolism Prevention Quality Standard: NICE, June 2010

http://www.nice.org.uk/aboutnice/qualitystandards/vteprevention/vtequalitystandard.jsp
- **Risk Assessment for Venous Thromboembolism: DH 2010**


- **Thrombosis and Embolism during Pregnancy and Puerperium: Reducing the risk (Green top – 37a): Royal College of Obstetricians and Gynaecologists (RCOG). 2009**

9. **EQUALITY IMPACT STATEMENT**

Portsmouth Hospitals NHS Trust is committed to ensuring that, as far as is reasonably practicable, the way we provide services to the public and the way we treat our staff reflects their individual needs and does not discriminate against individuals or groups on any grounds.

This policy has been assessed accordingly

Our values are the core of what Portsmouth Hospitals NHS Trust is and what we cherish. They are beliefs that manifest in the behaviours our employees display in the workplace. Our Values were developed after listening to our staff. They bring the Trust closer to its vision to be the best hospital, providing the best care by the best people and ensure that our patients are at the centre of all we do.

We are committed to promoting a culture founded on these values which form the ‘heart’ of our Trust:

- **Respect and dignity**
- **Quality of care**
- **Working together**
- **Efficiency**

This policy should be read and implemented with the Trust Values in mind at all times.
10. MONITORING COMPLIANCE WITH PROCEDURAL DOCUMENTS

This document will be monitored to ensure it is effective and to assurance compliance.

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VTE Policy : Issue Number 2 Issue Date 04/07/2014 (Review date:3/4/2016 (unless requirements change)
# Appendix 1

## RISK ASSESSMENT FOR VENOUS THROMBOEMBOLISM (VTE)

### Patient Information
- Hospital no:
- Surname:
- First name:
- DOB:

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Tick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical patient</td>
<td>Medical patient expected to have ongoing reduced mobility relative to normal state</td>
</tr>
<tr>
<td></td>
<td>Medical patient NOT expected to have significantly reduced mobility relative to normal state</td>
</tr>
<tr>
<td></td>
<td>Low Risk Cohort. Only select this option if the patient is included in the Trust’s cohort list (see over) and you consider the patient to be at low risk of VTE</td>
</tr>
</tbody>
</table>

### Thrombosis Risk

<table>
<thead>
<tr>
<th>Thrombosis Risk</th>
<th>Admission Related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient related</td>
<td>Active cancer or cancer treatment</td>
</tr>
<tr>
<td></td>
<td>Age &gt;60</td>
</tr>
<tr>
<td></td>
<td>Dehydration</td>
</tr>
<tr>
<td></td>
<td>Known thrombophilia (clotting disorder)</td>
</tr>
<tr>
<td></td>
<td>Obesity (BMI &gt; 30kg/m²)</td>
</tr>
<tr>
<td></td>
<td>One or more medical co-morbidities (e.g., heart disease, metabolic, endocrine or respiratory pathologies, acute infections, inflammatory conditions)</td>
</tr>
<tr>
<td></td>
<td>Personal / 1st degree relative with history of VTE</td>
</tr>
<tr>
<td></td>
<td>Use of IORT</td>
</tr>
<tr>
<td></td>
<td>Use of estrogen-containing DCT</td>
</tr>
<tr>
<td></td>
<td>Varicoceles, varicose veins with phlebitis</td>
</tr>
<tr>
<td></td>
<td>Pregnancy or &lt; 6 weeks post partum</td>
</tr>
</tbody>
</table>

### Pre-assessment Date
- Name:
- Signed:
- Risk assessment must be confirmed on admission

### Bleeding Risk

<table>
<thead>
<tr>
<th>Bleeding Risk</th>
<th>Admission Related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient related</td>
<td>Acute bleeding</td>
</tr>
<tr>
<td></td>
<td>Acquired bleeding disorder such as acute liver failure</td>
</tr>
<tr>
<td></td>
<td>Concurrent use of anticoagulants known to increase risk of bleeding such as INR &gt; 2</td>
</tr>
<tr>
<td></td>
<td>Acute stroke</td>
</tr>
<tr>
<td></td>
<td>Platelets &gt; 75 x 10^9 (check on admission)</td>
</tr>
<tr>
<td></td>
<td>Uncontrolled hypertension (&gt; 140/90)</td>
</tr>
<tr>
<td></td>
<td>Unthrombosed inherited bleeding disorder such as haemophilia or von Willebrand disease</td>
</tr>
</tbody>
</table>

### Risk of VTE

<table>
<thead>
<tr>
<th>Risk of VTE (tick)</th>
<th>High risk of VTE with low bleeding risk</th>
<th>High risk of VTE with significant bleeding risk</th>
<th>Low risk of VTE</th>
</tr>
</thead>
</table>

### Chemical prophylaxis prescribed?
- Yes
- No

### Clinician’s signature:
- Name:
- Date:

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<table>
<thead>
<tr>
<th>Risk of VTE</th>
<th>Surgical patients</th>
<th>Medical patients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIGH</strong> (with low risk of bleeding)</td>
<td><strong>Recommended prophylaxis</strong></td>
<td><strong>Recommended prophylaxis</strong></td>
</tr>
<tr>
<td></td>
<td>Enoxaparin 40mg daily</td>
<td>Enoxaparin 40mg daily</td>
</tr>
<tr>
<td></td>
<td>TED stockings +/- sequential compression device</td>
<td>Early mobilisation</td>
</tr>
<tr>
<td></td>
<td>Early mobilisation</td>
<td></td>
</tr>
<tr>
<td><strong>HIGH</strong> (with significant risk of bleeding)</td>
<td><strong>Recommended prophylaxis</strong></td>
<td><strong>Recommended prophylaxis</strong></td>
</tr>
<tr>
<td></td>
<td>TED stockings +/- sequential compression device</td>
<td>Early mobilisation</td>
</tr>
<tr>
<td></td>
<td>Early mobilisation</td>
<td></td>
</tr>
<tr>
<td><strong>LOW</strong></td>
<td>Early mobilisation</td>
<td>Early mobilisation</td>
</tr>
</tbody>
</table>

*Use rivaroxaban 10mg daily in elective hip or knee arthroplasty post-operatively only.*

Obstetric patients: please refer to RCOG green top guideline 37.

### Neurosurgical patients

- **Elective spinal surgery**
  - Cranial surgery patients
  - **Recommended prophylaxis**
    - Enoxaparin 40mg daily + TED stockings
    - STOP enoxaparin 24hrs postoperatively, restart 6h post-operatively

- **Emergency spinal patients**
  - **Recommended prophylaxis**
    - Enoxaparin 40mg daily + TED stockings

- **Major head injury**
  - **Recommended prophylaxis**
    - TED stockings

- **High bleeding risk (SAH, unsecured aneurism and AVM, SDH, EVD in situ, DBS insertion)**
  - **Recommended prophylaxis**
    - TED stockings

### Contraindications

<table>
<thead>
<tr>
<th>ENOXAPARIN</th>
<th>TED/SCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>CrCl &lt; 20ml/min - reduce dose to 20mg daily</td>
<td>Severe peripheral vascular disease</td>
</tr>
<tr>
<td>CrCl &lt; 20ml/min - use unfractionated heparin 5000iu bd</td>
<td></td>
</tr>
<tr>
<td>Significant active bleeding</td>
<td>Do NOT use SCD if recent lower limb DVT (can use TED)</td>
</tr>
<tr>
<td>Platelet count &lt; 75 x 10^9</td>
<td>Severe dermatitis</td>
</tr>
<tr>
<td>Untreated inherited bleeding disorder</td>
<td>Massive leg oedema</td>
</tr>
<tr>
<td>Previous HIT or allergy to enoxaparin</td>
<td>Leg deformity</td>
</tr>
<tr>
<td>On therapeutic anticoagulation</td>
<td>Peripheral neuropathy</td>
</tr>
<tr>
<td>Acquired bleeding disorder</td>
<td>Recent skin graft</td>
</tr>
<tr>
<td>Patient concerns about using animal products</td>
<td>Allergy to fabric</td>
</tr>
</tbody>
</table>

### Timing:

- Enoxaparin or Rivaroxaban should start 6hrs post-op (providing haemostasis secured) and then 1800 daily thereafter. In addition, enoxaparin can be given the evening prior to surgery (excluding neurosurgery, see above).
- Mechanical VTE prophylaxis should be offered at admission.

### Low risk cohorts

- Haemodialysis
- Day Case Endoscopy
- Day Case Bronchoscopy
- Day Case Dental Surgery
- Day Case Skin Biopsy
- Any other Day Case Procedure lasting less than 90 minutes and not requiring general anaesthesia
- Patients admitted to the Oncology / Haematology Day Unit for minor procedures, blood transfusions or chemotherapy
- Patients admitted to the Rheumatology Day Unit for minor interventions or therapies

### Duration:

- Continue until mobility no longer significantly reduced.
- High-risk orthopaedic patients should receive prophylaxis for at least 10 days. Elective knee replacement receive 14days prophylaxis and 28-35days prophylaxis should be given for elective hip replacement, hip fracture and other selected high-risk general surgery patients e.g. major cancer surgery.
- At risk patients fitted with a lower limb plaster cast will need to continue prophylaxis until cast removed.

### Obesity

- Consider enoxaparin 40mg bd if body weight > 100kg (or 60mg bd if body weight > 150kg).
- Discuss with consultant prior to prescribing BD doses.
# Lower Limb Immobilisation VTE risk

For all out-patients immobilised in a lower limb cast / boot / splint
Please tick every box relevant to yourself (the patient)

### Patient Details

| Risk                                           | Tick | Score |
|                                               |     |       |
| Age 60 years or above                          | 1    |       |
| Very overweight - Women with waist measurement over 88cm (35ins) and men with waist measurement over 104cm (40ins) | 2    |       |
| Severe mobility problems / unable to walk unaided before accident or injury | 2    |       |

### Current Medication

<table>
<thead>
<tr>
<th>Risk</th>
<th>Tick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Contraceptive Pill (birth control pill) or Hormone Replacement Therapy</td>
<td>1</td>
</tr>
<tr>
<td>Raloxifene or Tamoxifen</td>
<td>1</td>
</tr>
<tr>
<td>Erythropoetin, Thalidomide or Lenalidomide</td>
<td>2</td>
</tr>
</tbody>
</table>

### Family History

- Known family history of leg vein clots (Deep Vein Thrombosis, DVT) or lung clots (Pulmonary Embolism, PE) in close family (brother, sister, mother, father)

### Medical History

<table>
<thead>
<tr>
<th>Risk</th>
<th>Tick</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thrombophilia - A blood clotting disorder</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Varicose veins</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Lung disease / Heart disease / heart attack or stroke in last 6 months</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Inflammatory disease (bowel or joints)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Recent surgery or inpatient hospital stay in last 6 weeks</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Active cancer / undergoing treatment for cancer</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Previous history of leg vein clots (Deep Vein Thrombosis, DVT) or lung clots (Pulmonary Embolism, PE)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Pregnant within 6 weeks of childbirth</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Complex abdominal pelvic or lower limb surgery or pelvic fracture in last 6 weeks</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

### Injury Specific Risk

<table>
<thead>
<tr>
<th>Risk</th>
<th>Tick</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ruptured achilles tendon</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

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### Score Recommendation

- **0 - 2**: Keep active and make sure that you drink plenty of water every day
- **3 or more**: As above, a doctor will decide if you need enoxaparin (Clexane) 40mg once a day (as an injection) until the plaster cast is removed

### Patient Information Leaflet received

- **Yes**: [ ]
- **No**: [ ]

### Date:

**Date:**

**Signature:**

### Clinical Decision

- [ ] No Prophylaxis required.
- [ ] Enoxaparin 40mg daily prescribed.

**Date:**

**Signature:**

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*Version 3 agreed by Thrombosis Committee Nov 13*

*Medical Illustration ref: 12/8568*

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