Thrombosis Prevention and Anticoagulation Policy

V7.0

Nov 2017
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1. Introduction

1.1 Venous thromboembolism (VTE) is common in hospitalised medical patients, with a clinical incidence in high-risk groups of 5% and an associated risk of fatal pulmonary embolism of 1-10%. Thrombo-embolism prophylaxis is proven in similar risk groups in surgical cases, but audit shows this to be poorly implemented. Some 25,000 patients are estimated to die with hospital acquired thrombosis, half of which are avoidable.

1.2 The National Institute of Clinical Excellence (NICE) highlights practice that can help reduce or prevent VTE incidents. Recommendations include systematic patient assessment at the time of patient admission, accurate documentation of the assessment and appropriate action, including prophylaxis. This standard of practice is an essential element to delivering safe and effective patient care.

1.3 This version supersedes any previous versions of this document and should be used in conjunction with RCHT policies and procedures as stated on the front sheet.

2. Purpose of this Policy

The policy aims to:

- Provide clinical staff with clear set of standards of practice to deliver safe, effective patient care for the prevention and management of venous thromboembolism.

- Incorporate a systematic process and VTE risk assessment to identify adult patients at risk of VTE and documentation of rationale for decision-making.

- Provide staff with clinical guidance relating to prophylaxis, procedure to be followed if VTE is suspected and the management of the patient once a positive diagnosis has been made.

- Create a safer hospital environment.

3. Scope

This policy applies to all permanent, locum, agency and bank clinical staff regardless of grade or profession involved in patient assessment, treatment and care in all patient areas. This includes emergency, elective and day case areas. All professional groups are accountable to their professional bodies at all times.

4. Definitions / Glossary

**Adult** - from aged 18 years

**AED** - Anti-embolism Devices

**AF** - Atrial Fibrillation


**APTT** - Activated Partial Thromboplastin Time

**DOAC** – Direct Oral Anticoagulant (previously known as NOAC)
DVT - Deep Venous Thrombosis  
INR - International Normalised Ratio (based on the prothrombin time)  
IPC – Intermittent Pneumatic compression  
IV - Intravenous  
IU - International Units  
MS - Mitral Stenosis  
LMWH - Low Molecular Weight Heparin  
LVF - Left Ventricular Failure  
PE - Pulmonary Embolus  
PT - Prothrombin Time  
SC - Sub-Cutaneous  
TIA - Transient Ischaemic Attack  
UF - Unfractionated (sic heparin)  
VTE - Venous Thrombo-embolic Disease  
Antiphospholipid Syndrome - an acquired thrombophilic state associated with auto-antibodies against phospholipids, diagnosed by the in vitro finding of abnormal phospholipid dependant coagulation assays (ie lupus anticoagulant) and, or anticardiolipin antibodies on immuno-assay.  
Bio-prosthetic heart valve - a non-human tissue valve implant  
Proximal DVT - ileo-femoral thrombosis ie “above knee”.  
Recurrence - three or more episodes  
Thrombophilia - inherited or acquired disorders of the haemostatic system that may result in an increased risk of thrombosis  
EPMA – Electronic Prescribing and Medicines Administration (e-prescribing)

5. Ownership and Responsibilities

5.1. **Role of Nominated Director**

The Nominated Director is responsible for authorising final approval of the policy.

5.2. **Role of the Senior Line Managers**

Senior Line Managers are responsible for:

- Supporting professional non-professional groups involved in VTE pathways with resources that enable all aspects of Thrombosis and Anticoagulation – including VTE and bleeding risk assessment and data capture to be performed to the standards as set in this policy.

- Monitoring performance of VTE and bleeding risk assessment and taking action to address low performance.

5.3. **Role of the Matrons, Ward Sisters and Charge Nurses**

Matrons, Ward Sisters and Charge Nurses are responsible for:
Ensuring members of their teams are competent to ensure effective VTE assessment is undertaken where appropriate.
Ensuring members of their teams are knowledgeable and competent in the management of VTE prophylaxis or treatment if positive diagnosis is present.

5.4. **Role of the Senior Clinicians / Consultants**
Senior Clinicians / Consultants are responsible for:

- Ensuring junior colleagues are knowledgeable and competent in VTE assessment, prophylaxis and management.
- Monitoring performance of VTE and bleeding risk assessment and taking action where required.

5.5. **Role of Medical Staff**
Medical staff are responsible for:

- Taking a comprehensive patient medical history and completing VTE and bleeding risk assessment and arranging appropriate prophylaxis and/or treatment as per policy content.
- Completing the appropriate VTE risk assessment tool within the electronic prescription chart (EPMA).
- Reviewing the patient and / or prescribed medication within or at 24 hours and when condition changes occur.
- Considering further investigation and treatment where appropriate.
- Have a working knowledge of the management of suspected VTE and when a positive diagnosis has been made.

5.6. **Role of Individual Staff Members**
All Staff are responsible for:

- Taking positive steps to ensure the appropriate patient VTE assessment is completed accurately.
- Ensuring any actions identified through monitoring and evaluations are undertaken.
- Ensuring that any incidents linked with VTE assessment, prophylaxis or management are reported using the Trust’s incident reporting procedure.

5.7. **Role of the Thrombosis Prevention and Anticoagulation Steering Group**
The Thrombosis Prevention and Anticoagulation Steering Group is responsible for:
• Reporting progress on the management of Thrombosis and Anticoagulation to the Trust Board.

• Overseeing clinical governance frameworks, for example: reviewing national guidance and ensuring it is reflected in appropriate RCHT Policies relating to thrombosis and anticoagulation.

• Reviewing audit data identifying actions for improvement where applicable.

• Reporting to the Trust board matters relating to thrombosis prevention and anticoagulation in the Trust.

5.8. **Role of the RCHT Thrombosis Practitioner:**
The RCHT Thrombosis Practitioner is responsible for:

• Supporting professional and non-professional groups involved in VTE pathways with resources that enable all aspects of Thrombosis and Anticoagulation – including VTE and bleeding risk assessment and data capture to be performed to the standards as set in this policy.

• Supporting the Trust Thrombosis director in implementation of clinical governance frameworks, for example: reviewing national guidance and ensuring it is reflected in appropriate RCHT Policies relating to thrombosis and anticoagulation.

• Undertaking systematic Root Cause analysis for all cases of suspected Hospital Associated Thrombosis (HAT) ensuring confirmed cases are managed according to relevant Trust incident management policy.

• Reporting to the Trust Management Committee (Governance) matters relating to thrombosis prevention and anticoagulation in the Trust including outcomes related to confirmed Hospital Associated Thrombosis.

6. **Standards and Practice**

6.1. **Patient thrombosis and haemorrhagic risk assessment (Adults)**

6.1.1 All adult patients admitted to RCHT will receive a VTE and bleeding risk assessment on admission.

6.1.2 The VTE and bleeding risk assessment schema is incorporated into the RCHT Electronic Prescribing and Medicines Administration system (EPMA) and identifies adult patients with high VTE and bleeding risks (Appendix 1). Patient VTE risk assessment must be incorporated in the clinical assessment and medical clerking as part of the patient admission process. Clinicians must assess the patient’s risk of VTE against the risk of bleeding before prescribing appropriate VTE prophylaxis.

6.1.3 The schema acts as a guide for clinicians and documents the assessment in four steps, which must be completed appropriately.
1. Assessment of general patient groups.

2. Identifying VTE risks.

3. Identifying bleeding risks.

4. Chemical and / or mechanical prophylaxis prescribed if indicated.

6.1.4 The patient must be re-assessed in 24 hours or earlier if the patient’s condition changes rapidly. This is achieved by completion of a second VTE risk assessment within EPMA.

6.1.5 All VTE risk assessments and prescriptions for thrombo-prophylaxis must be reviewed as part of the post-take ward round to ensure they are concordant with the patient’s diagnosis and on-going plan of care.

6.1.6 All VTE risk assessments and prescriptions for thrombo-prophylaxis should be reviewed whenever a patient is transferred to a new clinical area to ensure they remain clinically appropriate to patient’s ongoing plan of care.

6.1.7 Patients whose VTE risk assessments are completed by non-medical staff, i.e. in pre-operative settings, MUST have a senior medical review ON THE DAY of their admission. The VTE assessment must then be completed within EPMA.

6.1.8 Some Day case patients are exempt on the basis of an agreed “cohort” of low risk for thrombosis. The agreed cohort is approved by the medical director. Appendix 2 summarises the cohort groups agreed as low risk.

6.1.9 Additional low risk cohort groups may be added following decision by the RCHT lead clinician for anticoagulation and agreement and authorisation by the medical director.

6.1.10 For VTE and bleeding risk assessments in pregnancy and up to 6 weeks post-partum please refer to the following documents:

- Venous thrombo-embolism (VTE) during pregnancy, labour and the post partum period, clinical guideline for the risk assessment of

- Venous thromboembolism (VTE) in pregnancy, labour and post natal period -clinical guideline for the diagnosis, referral, treatment and ongoing management.

6.1.11 Appendix 3 to this document provides simple guidance through the VTE assessment process.

6.2. **Prophylactic treatment for patients with increased risk of VTE**

6.2.1 Clinicians prescribing VTE prophylaxis must be aware of additional factors associated in specific patient groups. These include:
• **Stroke**: Patients admitted with stroke must not be offered anti-embolism stockings. Intermittent pneumatic compression (IPC) devices should be used in this patient group. See protocol at: [http://intra.cornwall.nhs.uk/DocumentsLibrary/RoyalCornwallHospitalsTrust/Clinical/DementiaAndEldercare/PreventionOfDVTAndPEInStrokePatients.pdf](http://intra.cornwall.nhs.uk/DocumentsLibrary/RoyalCornwallHospitalsTrust/Clinical/DementiaAndEldercare/PreventionOfDVTAndPEInStrokePatients.pdf)

• **Oncology**: Patients with cancer receiving oncological treatment and who are ambulant should not routinely be offered pharmacological or mechanical VTE prophylaxis. Specific individual patients such as Myeloma patients who are receiving thalidomide or lenalidomide should be assessed for VTE risk and offered thrombo-prophylaxis, unless contraindicated.

• **Palliative Care**: Patients in palliative care on end-of-life pathway should not routinely be offered pharmacological or mechanical VTE prophylaxis. This should be recorded within the Thrombosis Risk section of the Standard VTE risk assessment tool within EPMA

• **Existing antiplatelet or anticoagulant therapy**: Patients already having antiplatelet or anticoagulant therapy to treat other conditions may be offered additional mechanical or chemical VTE prophylaxis if patient is at risk of VTE. If the risk of VTE outweighs the risk of bleeding, than pharmacological VTE prophylaxis may be considered according to the reason for admission. If the risk of bleeding outweighs the risk of VTE, mechanical VTE prophylaxis should be offered.

• **Liver Disease**: Patients with Liver Disease whose coagulation tests are abnormal should not be regarded as ‘auto-anticoagulated’ and should be prescribed appropriate chemical or mechanical prophylaxis as indicated

• **Patients requiring extended prophylaxis**: Some patients may be indicated for extended chemical prophylaxis based on their underlying diagnosis or surgical intervention. A full list of current recommendations for extended prophylaxis can be found in Appendix 7

• Patients who are receiving full anticoagulant therapy **should not be offered** additional pharmacological or mechanical VTE prophylaxis.

• Patients taking Vitamin K antagonists and who are within their therapeutic range, providing anticoagulant therapy continues **should not be offered** additional pharmacological or mechanical VTE prophylaxis

• Patients Provided with Anti-embolic stockings should have them fitted and monitored in accordance with NICE guidance

• Patients who are contra-indicated to both LMWH prophylaxis and Anti-embolism Stockings should be offered prophylaxis with intermittent pneumatic compression (IPC)

• Appendix 4 to this document summarises key considerations

6.2.2 All staff should ensure that the patient and/or their families or carers are offered verbal and written information before starting VTE prophylaxis on:
The risks and possible consequences of VTE.

The importance of VTE prophylaxis and its possible side effects.

The correct use of VTE prophylaxis including anti-embolism stockings, or intermittent pneumatic compression devices.

Reducing their risk of VTE

6.2.3 All staff should ensure that patients and/or their families or carers are offered verbal and written information on VTE prevention as part of the discharge process

6.2.4 Where appropriate patients should be offered extended VTE prophylaxis post discharge in accordance with NICE guidance (see appendix 7)

6.2.5 Monitoring patients remain the responsibility of the senior clinician. Generally, monitoring is by clinical assessment, without the need for plasma monitoring.

6.2.6 Synthetic alternatives to heparin should be offered wherever possible to patients who have concerns about using animal products due to religious or personal beliefs or for dietary reasons, since heparin is of animal origin.

6.3. **Management for Suspected VTE**

6.3.1 Objective diagnosis is mandatory. In cases where VTE is suspected, clinical evaluation must be supported by confirmatory imaging. This may include:

- Doppler Compression ultrasound (CUS) (current diagnostic investigation of choice, being sensitive to ileo-femoral thrombosis for diagnosis of DVT).

- Venography (more sensitive to calf thrombosis, alternatively CUS with repeat at one week interval to exclude popliteal extension in cases of negative above knee ultrasound scans).

- Multi detector row CT pulmonary angiography (current investigation of choice for pulmonary embolus, although isotopic perfusion scintigraphy can be used to reduce radiation dose in patients with low pre-test probability and a normal chest X-ray.

6.3.2 Baseline blood tests should include full blood count, coagulation screen (APTT/INR), Urea and electrolytes and liver function tests.

6.3.3 In the out-patient, emergency department and medical admissions unit, initial investigations could include DVT screening using the pre-test probability (PTP) and / or D- dimer blood tests. D-dimer should not be used to exclude VTE in inpatients with stay >24 hours
6.3.4 Pending confirmation of the diagnosis LMW heparin should be commenced as indicated in the table below:

<table>
<thead>
<tr>
<th>Bodyweight to nearest kg</th>
<th>Anti-Xa units per day</th>
<th>Pre-filled syringe volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 46</td>
<td>7,500units</td>
<td>0.3 ml</td>
</tr>
<tr>
<td>46-56</td>
<td>10,000units</td>
<td>0.4 ml</td>
</tr>
<tr>
<td>57-68</td>
<td>12,500units</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>69-82</td>
<td>15,000units</td>
<td>0.6 ml</td>
</tr>
<tr>
<td>83 to 100kg</td>
<td>18,000units</td>
<td>0.7 ml</td>
</tr>
</tbody>
</table>

The maximum dose is 18,000 units when given once daily, larger doses should be given as 100 units/kg twice daily S.C.

In patients at risk of bleeding, e.g. post-surgery, 100 units/kg twice daily S.C. dalteparin is recommended, using appropriate pre-filled syringes. With this treatment schedule the maximum dose is 10,000 units bd.

6.3.5 Patients with suspected deep vein thrombosis should be offered an interim therapeutic dose of anticoagulation therapy if diagnostic investigations are expected to take longer than 4 hours from the time of first clinical suspicion.

6.3.6 Patients with suspected pulmonary embolism should be offered an interim therapeutic dose of anticoagulation therapy if diagnostic investigations are expected to take longer than 1 hour from the time of first clinical suspicion.

6.3.7 Diagnostic investigations for DVT and PE should be completed within 24 hours of first clinical suspicion.

6.3.8 The clinical pathway for excluding / confirming VTE conditions e.g. deep vein thrombosis and pulmonary embolism is summarised in Appendix 5.

6.3.9 If all screening proves negative then re-introduce prophylactic Low Molecular Weight Heparin 24 hours after administering the last therapeutic heparin.

6.4. **Management for Confirmed VTE**

**Massive Pulmonary Embolism**

6.4.1 Massive pulmonary embolus (PE) with haemodynamic instability is likely in the presence of:

- Collapse/hypotension, and
- Unexplained hypoxia, and
- Engorged neck veins, and right ventricular gallop (often)

6.4.2 Emergency echocardiography may support the diagnosis by the demonstration of right ventricular strain.

6.4.3 Thrombolysis is the first line of treatment for massive PE and may be instituted on clinical grounds alone.
6.4.4 A total dose of 100 mg of alteplase should be administered in 2 hours as per the following dose regimen:

<table>
<thead>
<tr>
<th>Treatment for Pulmonary Embolism</th>
<th>Concentration of alteplase</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 mg as an intravenous bolus over 1 - 2 minutes</td>
<td>10ml 2mg/ml</td>
</tr>
<tr>
<td>followed by an intravenous infusion of 90 mg over 2 hours</td>
<td>90ml 45ml</td>
</tr>
</tbody>
</table>

*The total dose should not exceed 1.5 mg/kg in patients with a body weight below 65 kg.*

6.4.5 Streptokinase may be administered as 250,000 units by IV infusion, over 20-30 minutes, followed by an infusion at a rate of 100,000 per hour for 24-72 hours, without laboratory monitoring (BNF section 2.10.2). It is then followed by anticoagulation with heparin/warfarin as per table below.

**NB Streptokinase should never be used again beyond 4 days from the initial use**

6.4.6 LMWH and Anti-Xa inhibitors have short half-lives, therefore patients on prophylactic anticoagulant therapy should receive a full dose of therapeutic Low Molecular Weight Heparin.

**Confirmed VTE**

6.4.7 Adult patients with confirmed VTE (DVT/PE) should be offered the choice of anticoagulation with a Vitamin K antagonist ie Warfarin or, where appropriate, treatment with a Direct Oral Anticoagulant (DOAC). Where patient choice is for a DOAC this is commonly commenced with support from the anticoagulation/Thrombosis nursing team (bleep 3219)

6.4.8 Adult patients with confirmed VTE (DVT/PE) who choose anticoagulation with Warfarin should receive therapeutic doses of LWMH as indicated in the table below until Warfarin has reached therapeutic levels.

<table>
<thead>
<tr>
<th>Bodyweight to nearest kg</th>
<th>Anti-Xa units per day</th>
<th>Pre-filled syringe volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 46</td>
<td>7,500 units</td>
<td>0.3 ml</td>
</tr>
<tr>
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<td>0.6 ml</td>
</tr>
<tr>
<td>83 to 100kg</td>
<td>18,000 units</td>
<td>0.7 ml</td>
</tr>
</tbody>
</table>

The maximum dose is 18,000 units when given once daily, larger doses should be given as 100 units/kg twice daily S.C.

In patients at risk of bleeding, e.g. post-surgery, 100 units/kg twice daily S.C. dalteparin is recommended, using appropriate pre-filled syringes. With this treatment schedule the maximum dose is 10,000 units bd.
6.4.9 Therapeutic heparin and warfarin to be used concurrently to attain a therapeutic INR. The patient must have a baseline INR and then commencing on Day 1, in conjunction with Heparin the following loading dose for acute therapy is set in the table below.

<table>
<thead>
<tr>
<th>Standard patient</th>
<th>Age &gt;60, wt &lt;50kg, or CCF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day</td>
<td>INR</td>
</tr>
<tr>
<td>1</td>
<td>&lt;1.4</td>
</tr>
<tr>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>&lt;2</td>
</tr>
<tr>
<td></td>
<td>2.0-2.5</td>
</tr>
<tr>
<td></td>
<td>2.6-3.0</td>
</tr>
<tr>
<td></td>
<td>3.1-4.0</td>
</tr>
<tr>
<td></td>
<td>&gt;4.1</td>
</tr>
</tbody>
</table>

*Day 4 continue on day 3 dose rechecking on day 5, or discharge on this dose for early review. (Modified from Fennerty et al 1988)*

6.4.10 Adult patients with confirmed VTE (DVT/PE) who choose anticoagulation with a DOAC should receive treatment with one of the medications outlined below. Preference should be given to either Rivaroxaban or Apixaban for first line treatment of VTE, Edoxaban should only be used in specific identified cases and on a specialist initiated basis only – contact the thrombosis and anticoagulation nursing team for advice (bleep 3219)

**Rivaroxaban (Xarelto®)**

<table>
<thead>
<tr>
<th>Dosing schedule</th>
<th>Maximum daily dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>15mg twice daily for the first 21 days</td>
<td>30mg</td>
</tr>
<tr>
<td>followed by 20mg once daily (15mg for patients with higher risk of bleeding)</td>
<td>20mg</td>
</tr>
</tbody>
</table>

**Apixaban (Eliquis®)**

<table>
<thead>
<tr>
<th>Dosing schedule</th>
<th>Maximum daily dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>10mg twice daily for the first 7 days</td>
<td>20mg</td>
</tr>
<tr>
<td>followed by 5mg twice daily for up to 6 months</td>
<td>10mg</td>
</tr>
<tr>
<td>For prevention of recurrent DVT and/or PE following completion of 6 months of treatment dose is 2.5mg twice daily</td>
<td>5mg</td>
</tr>
</tbody>
</table>

6.4.11 NOTE: there is NO requirement for concurrent use of LMWH when patients with confirmed VTE are treated with a either Rivaroxaban or Apixaban

**Dabigatran (Pradaxa®)**

Following treatment with a parenteral anticoagulant for at least 5 days dosing is as follows

<table>
<thead>
<tr>
<th>Dosing schedule (standard patient)</th>
<th>Maximum daily dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>150mg twice daily</td>
<td>300mg</td>
</tr>
<tr>
<td>Patients age &gt;80 and/or taking verapamil</td>
<td>110mg twice daily</td>
</tr>
</tbody>
</table>
For the following groups the total daily dose of Pradaxa of 300 mg or 220 mg should be selected based on an individual assessment of the thromboembolic risk and the risk of bleeding:

- Patients between 75-80 years
- Patients with moderate renal impairment
- Patients with gastritis, esophagitis or gastro-esophageal reflux
- Other patients at increased risk of bleeding

**Edoxaban (Lixiana®)**

Following treatment with a parenteral anticoagulant for at least 5 days dosing is as follows

<table>
<thead>
<tr>
<th>Dosing schedule (standard patient)</th>
<th>Maximum daily dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>60mg once daily</td>
<td>60mg</td>
</tr>
<tr>
<td>Patients with moderate to severe renal failure (CrCl 15-50ml/min) or low body weight (&lt;60kg)</td>
<td>30mg once daily 30mg</td>
</tr>
</tbody>
</table>

6.4.12 The pathway for clinical management for VTE conditions e.g. deep vein thrombosis and pulmonary embolism with Warfarin is summarised in Appendix 6.

**6.5. Heparin Induced Thrombocytopenia (HIT) and Platelet Monitoring**

6.5.1. This may occur after 5-7 days in previously unexposed patients, or earlier with previous drug exposure with both unfractionated and Low Molecular Weight heparins and even in patients on low-dose prophylactic therapy. However most patients including patients receiving treatment with DOAC’s will not require routine monitoring for HIT

6.5.2 Patients receiving either heparin will have their platelet count checked on the day of starting treatment.

6.5.3 Patients exposed to heparin in the last 100 days should have a baseline platelet count and a platelet count 24 hours after starting heparin.

6.5.4 Patients receiving unfractionated heparin, alternate day platelet counts should be performed from days 4 to 14.

6.5.5 Post cardio-pulmonary bypass patients receiving LMWH, should have platelet counts performed every 2 to 4 days from days 4-14 or until heparin is stopped.

6.5.6 Obstetric patients receiving prophylactic treatment doses of LMWH please refer to RCHT guidelines.

6.5.7 Any significant fall (>50%) in the platelet count, even if this is still within normal limits, is highly suspicious of “HIT” Advice must be sought from
the on-call consultant haematologist or registrar for immediate and future patient management following a clinical assessment.

6.5.8 If the pre-test probability of HIT is high, heparin should be stopped and an alternative anticoagulant started in full dosage whilst laboratory tests are performed unless there are significant contraindications.

7. Dissemination

7.1 This document will be implemented and disseminated through the organisation immediately following ratification and will be published on the organisations intranet site (document library). This document replaces the previous version.

7.2 Dissemination will include staff notification via daily bulletin. Senior clinicians and specialty governance leads will be responsible for notifying their clinical teams of the policy.

7.3 Access to this document is open to all staff.

7.4 Implementation of policy contents will be delivered by the Learning and Development Department as identified on the Trust Training Needs Analysis.

7.5 Junior medical (Foundation) staff are required to demonstrate proficiency through their clinical portfolio. Medical e-learning modules (registration required) with certification are available through the British Medical Journal website.

8. Monitoring compliance and effectiveness

<table>
<thead>
<tr>
<th>Element to be monitored</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>All adult patients admitted to RCHT will have a completed VTE and bleeding risk assessment on admission (excluding low risk cohorts).</td>
<td>Completed Assessment</td>
</tr>
<tr>
<td>All patients admitted to RCHT and assessed as high risk of VTE will receive correct prophylaxis.</td>
<td>Results uploaded to the Department of Health UNIFY</td>
</tr>
<tr>
<td>All patients with positive diagnosis will receive correct therapeutic management</td>
<td>Results sent to Divisional Managers, Senior Matrons, Matrons, ward sisters and charge nurses.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lead</th>
<th>Medication Safety Lead Pharmacist</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Tool</th>
<th>UNIFY national data tool</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pharmacy Audit Tool</td>
</tr>
<tr>
<td></td>
<td>Audit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Reporting arrangements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly</td>
<td>Results sent to all divisional general managers, clinicians, divisional</td>
</tr>
<tr>
<td>Monthly</td>
<td>Correct Prophylaxis</td>
</tr>
<tr>
<td>Annual</td>
<td></td>
</tr>
</tbody>
</table>
governance leads, matrons for action where identified.
Correct therapeutic management
- Reported to Thrombosis Prevention and Anticoagulation Steering Group which reports to Divisional Quality Group

| Acting on recommendations and Lead(s) | - The DQG is responsible for interrogating required actions and to designate a named lead where appropriate. This is documented in meeting minutes. |
| Change in practice and lessons to be shared | - Designated Leads will forward where appropriate the lessons to be shared with all the relevant stakeholders. |

9. Updating and Review
9.1 The document review process is managed via the document library.
Document review will be every three years unless best practice dictates otherwise.
The author remains responsible for policy document review. Should they no longer work in the organisation or in the relevant practice area then an appropriate practitioner will be nominated to undertake the document review by the designated Director.

9.2 Revision activity will be recorded in the Versions Control Table to ensure robust document control measures are maintained.

10. Equality and Diversity
10.1 This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the ‘Equality, Diversity & Human Rights Policy’ or the Equality and Diversity website.

10.2 Equality Impact Assessment
The completed initial EIA is provided in Appendix 9.
Appendix 1. VTE and Bleeding Risk Assessment within EPMA and prescribing of Thrombo-Prophylaxis

Mobility Section (Step 1)
The assessor can only tick one of the three options in the mobility section of the form.

Once a tick box is selected the other two tick columns will be disabled (greyed out). For example if the assessor selects ‘Surgical patient’ by clicking in the ‘Tick’ checkbox the second and third options will be inactive and will be greyed out.

Thrombosis Risk Section (Step 2)
The assessor should tick all appropriate boxes in this section if active/enabled.

Please note there is the facility for additional risks to set up in the Thrombosis Risk section. If Additional Risks are added to the Thrombosis section this will automatically populate the three empty fields on the form shown above. If defined the risks along with a tick box will appear for selection. The assessor must check the tick box if the additional risk is required.
Bleeding Risk Section (Step 3)

The assessor can tick any appropriate box in this section if active/enabled.

Please note. An extra box has been added here specifically for patients who are within the ED and who are not expected to be admitted. If this box is ticked then the RA can be considered complete. The RA will need to be reviewed and the patient re-assessed if their status changes to medical or surgically admitted patient.

Additional boxes are included for paediatric patients who do not require routine VTE RA and for the recording of contra-indications to AES/IPC

Actions required based on EPMA VTE risk assessment (Step 4)

Following completion of the VTE risk assessment within EPMA a prescription for thrombo-prophylaxis should be provided as follows:

If there are no contra-indications Anti-Embolism Stockings (AES) should be routinely provided to all inpatients or daycase patients with limited mobility in the following indicated groups:

- General surgery
- Urological surgery
- Gynaecological surgery (excluding caesarian section)
- Orthopaedic lower limb surgery
- Situations where drug prophylaxis is required but contra-indicated
## Appendix 2. Cohort groups considered low risk

<table>
<thead>
<tr>
<th>Cohort group by location or intervention</th>
<th>Rationale for Low Risk assessment</th>
<th>Exemption Conditions: When VTE RA is indicated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemodialysis undertaken at either Treliske or WCH Renal Unit</td>
<td>Patients attend unit for ≤4 hours. No reduction in normal level of mobility as result of attendance</td>
<td>Patients who attend or are transferred to Renal Unit as part of an inpatient episode. Patients requiring admission</td>
</tr>
<tr>
<td>Day-case chemotherapy via Headland Unit</td>
<td>Medical patients attend as day-case for treatment. No reduction in normal level of mobility as result of attendance</td>
<td>Patients who attend or are transferred to Headland Unit as part of an inpatient episode. Patients attending who require direct inpatient admission</td>
</tr>
<tr>
<td>Endoscopy or colonoscopy procedures via Endoscopy unit Treliske</td>
<td>Medical patients attend for daycase procedures. No reduction in mobility from normal state</td>
<td>Patients who attend endoscopy as part of an inpatient episode or who require direct inpatient admission following attendance</td>
</tr>
<tr>
<td>Medical Day Unit - Medical day case patients having interventions or procedures</td>
<td>Patients attend as Day case. Not admitted to beds. No reduction of mobility as a result of attendance</td>
<td>Patients who require admission following an episode of day case care.</td>
</tr>
<tr>
<td>Ophthalmological patients with local anaesthetic, regional sedation and not full general anaesthetic</td>
<td>Short duration surgery no ongoing post-operative risk. Patient should be considered for mechanical prophylaxis for surgery unless contra-indicated</td>
<td>Patient attending as part of a current inpatient stay or requiring admission following attendance</td>
</tr>
<tr>
<td>Non-Cancer ENT surgery lasting less than 90 minutes with local anaesthetic or regional sedation and not full general anaesthetic</td>
<td>Short duration surgery no ongoing post-operative risk. Patient should wear mechanical prophylaxis for surgery unless otherwise contra-indicated</td>
<td>Patient attending as part of a current inpatient stay or requiring inpatient admission following attendance</td>
</tr>
<tr>
<td>Non-Cancer plastic surgery lasting less than 90 minutes with local anaesthetic or regional sedation and not full general anaesthetic</td>
<td>Short duration surgery no ongoing post-operative risk. Patient should wear mechanical prophylaxis for surgery unless otherwise contra-indicated</td>
<td>Patient attending as part of a current inpatient stay or requiring inpatient admission following attendance</td>
</tr>
<tr>
<td>Non-Cancer dental or maxilla-facial surgery lasting less than 90 minutes with local anaesthetic or regional sedation and not full GA</td>
<td>Short duration surgery no ongoing post-operative risk. Patient should wear mechanical prophylaxis for surgery unless otherwise contra-indicated</td>
<td>Patient attending as part of a current inpatient stay or requiring inpatient admission following attendance</td>
</tr>
<tr>
<td>Other similar minor surgical procedures lasting less than 90 minutes with local anaesthetic or regional sedation and not full GA</td>
<td>Short duration surgery no ongoing post-operative risk. Patient should wear mechanical prophylaxis for surgery unless otherwise contra-indicated</td>
<td>Patient attending as part of a current inpatient stay or requiring inpatient admission following attendance</td>
</tr>
</tbody>
</table>

This is general guidance and, as ever, clinical judgement in individual patient cases should be exercised.
Appendix 3. Venous Thromboembolism (VTE) Risk Assessment (All Adult Patients)

Patient medical history and examination

As per RCHT prescription chart * excluding agreed low risk cohort groups

VTE risk assessment  \( \longrightarrow \)  Bleeding risk assessment

No VTE risk factors

No prophylaxis required

Reassess within 24 hours and whenever clinical situation changes.

Increased VTE risk factors with NO bleeding risks

Increased VTE risk factors AND bleeding risks. Risk of bleeding outweighs risk of VTE

Mechanical prophylaxis as per prescription chart unless contra-indicated

Reassess within 24 hours and whenever clinical situation changes.

Medical patients

- Critical care
- Palliative Care
- Cancer / Chemotherapy
- General Medical
- Stroke

Surgical patients

- General surgery (including cardiac)
- Gynaecological, thoracic, urological, all day surgery
- Orthopaedic

Pregnancy / Puerperium

NOTE: Please refer to RCHT documents (obstetrics) as referenced on the front sheet of this policy

Trauma

- Major trauma
- Spinal injury
- Lower limb plaster cast

Determine if special considerations exist before prescribing prophylaxis (Appendix 4)

Patient provided with written/ verbal advice. Prophylaxis as per RCHT prescription chart. Sign and Dated.

Discuss with senior clinician / haematologist. Document outcomes

no

yes
Appendix 4. Special Considerations

The patient allergy status must be checked for contra-indications, known hyper-sensitivity to thrombo-prophylaxis. Patient medical history should be checked to exclude incident of heparin induced thrombocytoapenia.

<table>
<thead>
<tr>
<th>Patient Group</th>
<th>Assessment</th>
<th>Pharmacological Prophylaxis</th>
<th>Mechanical Prophylaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical Care</strong></td>
<td>Patient reviewed daily or more frequently if their condition is changing rapidly. (NICE, 2010)</td>
<td>LMWH (or UFH if eGFR&lt;30ml/min): according to patient's reason for admission.</td>
<td>Anti-embolism stockings(AES) or IPC if chemical prophylaxis is contra-indicated and/or according to patient's reason for admission.</td>
</tr>
<tr>
<td></td>
<td>Take into account planned interventions and other therapies that increase risk of complications.</td>
<td></td>
<td>Do not prescribe if known contra-indications to AES or IPC</td>
</tr>
<tr>
<td><strong>Palliative Care</strong></td>
<td>Patients in or palliative care should be reviewed daily or more frequently if their condition is changing rapidly. (NICE, 2010).</td>
<td>Outpatients with active cancer and who are fully ambulant should not routinely be given thrombo-prophylaxis (regardless of chemotherapy or hormone therapy status). Routine thrombo-prophylaxis is recommended for all cancer inpatients as for other high-risk general medical patients</td>
<td>Anti-embolism stockings (AES) or IPC if chemical prophylaxis is contra-indicated.</td>
</tr>
<tr>
<td></td>
<td>Assess if patient is for terminal care or end-of-life care pathway</td>
<td></td>
<td>Do not prescribe if known contra-indications to AES or IPC</td>
</tr>
<tr>
<td><strong>Cardiology</strong></td>
<td>Acute coronary syndromes (including a history of chest pain, raised cardiac enzymes or altered electrocardiogram): may increase the risk of VTE</td>
<td>For the majority of patients with acute coronary syndrome, routine treatment is with Fondaparinux, aspirin and ticagrelor. Thrombo-prophylaxis Post PCI should be with Dalteparin or Enoxaparin as recommended for other high-risk general medical patients (regardless of current antithrombotic medications such as aspirin, clopidogrel)</td>
<td>Anti-embolism stockings or IPC if chemical prophylaxis is contra-indicated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Do not prescribe if known contra-indications to AES or IPC</td>
</tr>
<tr>
<td>Patient Group</td>
<td>Assessment</td>
<td>Pharmacological Prophylaxis</td>
<td>Mechanical Prophylaxis</td>
</tr>
<tr>
<td>---------------</td>
<td>------------</td>
<td>-----------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Stroke</td>
<td>The diagnosis of haemorrhagic stroke MUST be excluded and the patient re-assessed for VTE and bleeding risk before pharmacological prophylaxis is prescribed.</td>
<td>LWMH if patient has LOW risk of bleeding i.e. LOW risk of haemorrhagic transformation of stroke or bleeding into another site and has one or more of the following: • major restriction of mobility • previous history of VTE • dehydration or comorbidities (such as malignant disease). Refer to RCHT stroke guidance</td>
<td>Anti-embolism stockings are contra-indicated. Offer intermittent pneumatic compression (IPC) device until patient is re-assessed and can have pharmacological VTE prophylaxis</td>
</tr>
<tr>
<td>General surgery, Urological and Gynaecological surgery (excluding caesarean Section)</td>
<td>If the patient has one or more VTE risk factors, then the risk of bleeding must be assessed and consideration given whether the benefits of reducing the risk of VTE outweigh the bleeding risk.</td>
<td>LMWH (or UFH if eGFR&lt;30ml/min based on assessment / bleeding risk / VTE risk</td>
<td>Anti-embolism stockings (AES) on admission for high risk patients until their mobility is no longer significantly reduced. Do not prescribe if known contra-indications to AES Consider use of IPC in high risk patients who are contra-indicated to AES</td>
</tr>
</tbody>
</table>

**NOTE- Spinal / epidural:** Prophylaxis is commenced 12 hours prior to surgery/siting of an epidural. If blood is present during needle or catheter placement than prophylaxis should be delayed for 24 hours. Prophylaxis should be prescribed at least 6-8 hrs post-operatively the following late evening (based on 22.00hr practice). Epidural Catheters should be removed 10-12 hours after the last dose of LMWH.
<table>
<thead>
<tr>
<th>Patient Group</th>
<th>Assessment</th>
<th>Pharmacological Prophylaxis</th>
<th>Mechanical Prophylaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Orthopaedic Surgery</strong></td>
<td>If the patient has one or more VTE risk factors, then the risk of bleeding must be assessed and consideration given whether the benefits of reducing the risk of VTE outweigh the bleeding risk.</td>
<td>In <strong>Hip fracture surgery</strong>: prophylaxis is usually to be continued for 5 weeks. <strong>Elective hip surgery including replacement</strong>: Rivaroxaban as per RCHT prescription chart: start 6-10 hours post surgery usually continued for 5 weeks after surgery. <strong>Elective Knee replacement surgery</strong>: Rivaroxaban as per RCHT prescription chart started 6-10 hours post surgery and continued for 2 weeks after surgery.</td>
<td>Anti-embolism stockings until mobility is no longer significantly reduced. Consider use of IPC in high risk patients who are contra-indicated to AES</td>
</tr>
<tr>
<td><strong>Lower Limb immobilisation</strong></td>
<td>Offer pharmacological VTE prophylaxis to patients with lower limb plaster casts or lower limb immobility who are non-weight bearing after VTE risk assessment using locally approved risk assessment tool and following clinical discussion with the patient. NB There are no nationally approved tools for stratifying risk in this patient cohort – a locally approved risk assessment tool for patients with lower leg immobility who are non-weight bearing is available (see Appendix 7 RCHT thrombosis prevention, investigation and management guidelines)</td>
<td>Offer LMWH daily (unlicensed indication) eGFR &gt;30ml/min Dalteparin 5000units once daily eGFR &lt;30ml/Min Enoxaparin 2000units (20mg) once daily Prophylaxis dose DOAC should be considered in patients who are needle phobic (unlicensed indication) Prophylaxis should continue until lower limb plaster cast removal and/or patient is fully weight bearing</td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Pregnancy up to 6 weeks post partum admitted to hospital but not undergoing surgery</strong></td>
<td>▪ Refer to RCHT Risk assessment for thromboprophylaxis during pregnancy, labour and after vaginal delivery, and ▪ RCHT Thromboprophylaxis in pregnancy</td>
<td>LMWH is drug of choice but patients should be informed that it is not licensed for use in pregnancy. ▪ Refer to RCHT Risk assessment for thromboprophylaxis during pregnancy, labour and after vaginal delivery, and ▪ RCHT Thromboprophylaxis in pregnancy</td>
<td>As per RCHT Guidelines: ▪ Risk assessment for thromboprophylaxis during pregnancy, labour and after vaginal delivery: ▪ RCHT Thromboprophylaxis in pregnancy</td>
</tr>
<tr>
<td>Patient Group</td>
<td>Assessment</td>
<td>Pharmacological Prophylaxis</td>
<td>Mechanical Prophylaxis</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>-----------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Patients on Vitamin K Antagonists</td>
<td>Vitamin K: Patients taking Vitamin K antagonists and who are within their therapeutic range, providing anticoagulant therapy continues should not be offered additional pharmacological or mechanical VTE prophylaxis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patients on existing antiplatelet or anticoagulant therapy.</td>
<td>May be offered additional mechanical or chemical VTE prophylaxis if patient is at risk of VTE. If the risk of VTE outweighs the risk of bleeding, than pharmacological VTE prophylaxis may be considered according to the reason for admission. If the risk of bleeding outweighs the risk of VTE, mechanical VTE prophylaxis should be offered.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Any patient already receiving **full anticoagulant therapy should not be offered additional pharmacological or mechanical VTE prophylaxis**
Appendix 5. Suspected VTE (DVT and PE) Management Pathway

Patient Assessment - presenting complaint, medical history and examination

Baseline FBC, coagulation screen (APTT/INR) U+E’s, LFT’s and D-dimer.
Start empirical treatment

Diagnostic - Doppler Compression ultrasound (CUS) / Venography

DVT detected
Commence VTE management

DVT not detected
Raised D-dimer levels / scan inconclusive
Further Imaging

DVT detected
Commence VTE management

Normal D-dimer levels = DVT excluded. Discharge / Admit for further investigations

If admitted - stop empirical treatment and start VTE prophylaxis regime 24 hours after last dose.

Consider urgent empirical treatment

Urgent Imaging
Multi detector row CT pulmonary angiography / isotopic perfusion scintography

PE detected
Commence VTE management

PE not detected = PE unlikely

Normal D-dimer levels

Consider D-dimer test

Raised D-dimer levels
Consider emergency thrombolytic therapy
Commence VTE management

PE confirmed
Immediate surgical intervention

PE unconfirmed
Consider other causes of collapse

Haemodynamic instability - Consider referral to ITU

Emergency investigations / imaging e.g. echocardiogram.
Appendix 6. Confirmed VTE (DVT and PE) Management Pathway with LMWH and Vitamin K Antagonist

DVT and PE treatment dosage with dalteparin prefilled syringes
Based on 200 units per kg once daily, ie every 24 hrs subcutaneously

<table>
<thead>
<tr>
<th>Bodyweight to nearest kg</th>
<th>Anti-Xa units per day</th>
<th>Pre-filled syringe volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 46</td>
<td>7,500 units</td>
<td>0.3 ml</td>
</tr>
<tr>
<td>46-56</td>
<td>10,000 units</td>
<td>0.4 ml</td>
</tr>
<tr>
<td>57-68</td>
<td>12,500 units</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>69-82</td>
<td>15,000 units</td>
<td>0.6 ml</td>
</tr>
<tr>
<td>83 to 100kg</td>
<td>18,000 units</td>
<td>0.7 ml</td>
</tr>
</tbody>
</table>

The maximum dose is 18,000 units when given once daily, larger doses should be given as 100 units/kg twice daily S.C.

In patients at risk of bleeding, e.g. post-surgery, 100 units/kg twice daily S.C. dalteparin is recommended, using appropriate pre-filled syringes. With this treatment schedule the maximum dose is 10,000 units bd.
## Appendix 7. NICE recommendations for Continued VTE (DVT and PE) prophylaxis post discharge

<table>
<thead>
<tr>
<th>Operation</th>
<th>Course length</th>
<th>Treatment of choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any bowel resection to remove a malignancy</td>
<td>28 days post surgery</td>
<td>Appropriate prophylactic LMWH (Dalteparin/Enoxaparin daily)</td>
</tr>
<tr>
<td>Surgery for obesity (bypass and gastric banding)</td>
<td>7 days post surgery</td>
<td>Appropriate prophylactic LMWH (Dalteparin/Enoxaparin daily)</td>
</tr>
<tr>
<td>Gynae surgery: that meet the following conditions</td>
<td>28 days post surgery</td>
<td>Appropriate prophylactic LMWH (Dalteparin/Enoxaparin daily)</td>
</tr>
<tr>
<td>Ovarian cancer - advanced ovarian cancer patients undergoing cytoreductive surgery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endometrial cancer – patients undergoing open hysterectomy that are grossly obese or with 2 or more risk factors (excluding active cancer) for VTE (Box 1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cervical cancer – undergoing radical hysterectomy and pelvic node dissection with 1 or more risk factors (excluding active cancer) for VTE (Box 1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extensive abdominal or pelvic surgery for gynaecological cancer e.g. exenterative surgery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any cancer patient with a history of VTE (based on paper by Peedicayil et al)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any cancer patient with prolonged hospitalisation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nephrectomy for the removal of malignancy</td>
<td>28 days post surgery</td>
<td>Appropriate prophylactic LMWH (Dalteparin/Enoxaparin daily)</td>
</tr>
<tr>
<td>Elective hip replacement</td>
<td>35 days post surgery</td>
<td>Rivaroxaban 10mg daily</td>
</tr>
<tr>
<td>Elective knee replacement</td>
<td>14 days post surgery</td>
<td>Rivaroxaban 10mg daily</td>
</tr>
<tr>
<td>Hip fracture</td>
<td>35 days post surgery</td>
<td>Appropriate prophylactic LMWH (Dalteparin/Enoxaparin daily)</td>
</tr>
<tr>
<td>Patient’s in lower limb plaster casts</td>
<td>Until cast removed</td>
<td>Appropriate prophylactic LMWH (Dalteparin/Enoxaparin daily)</td>
</tr>
</tbody>
</table>
## Appendix 8. Governance Information

<table>
<thead>
<tr>
<th>Document Title</th>
<th>Thrombosis prevention and anticoagulation policy V7.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Issued/Approved:</td>
<td></td>
</tr>
<tr>
<td>Date Valid From:</td>
<td></td>
</tr>
<tr>
<td>Date Valid To:</td>
<td></td>
</tr>
<tr>
<td>Directorate / Department responsible (author/owner):</td>
<td>Andrew McSorley, Lead Anticoagulation/Thrombosis Nurse</td>
</tr>
<tr>
<td>Contact details:</td>
<td>01872-253597</td>
</tr>
<tr>
<td>Brief summary of contents</td>
<td>This policy provides clinical staff with guidance in managing the risks associated with the prevention and management of venous thromboembolism of adult patients when in hospital.</td>
</tr>
<tr>
<td>Suggested Keywords:</td>
<td>VTE; anticoagulation; venous thromboembolism;</td>
</tr>
<tr>
<td>Target Audience</td>
<td>RCHT</td>
</tr>
<tr>
<td>Executive Director responsible for Policy:</td>
<td>Medical Director</td>
</tr>
<tr>
<td>Date revised:</td>
<td>June 2016</td>
</tr>
<tr>
<td>This document replaces (exact title of previous version):</td>
<td>Thrombosis prevention and anticoagulation policy V6.0</td>
</tr>
<tr>
<td>Approval route (names of committees)/consultation:</td>
<td>Thrombosis Prevention and Anticoagulation Steering Group CSSC Governance DMB</td>
</tr>
<tr>
<td>Divisional Manager confirming approval processes</td>
<td>Sally Kennedy, Divisional Director CSSC</td>
</tr>
<tr>
<td>Name and Post Title of additional signatories</td>
<td>Not Required</td>
</tr>
<tr>
<td>Name and Signature of Divisional/Directorate Governance Lead confirming approval by specialty and divisional management meetings</td>
<td>{Original Copy Signed} Name: Janet Gardner, Governance Lead CSSC</td>
</tr>
<tr>
<td>Signature of Executive Director giving approval</td>
<td>{Original Copy Signed}</td>
</tr>
<tr>
<td>Publication Location (refer to Policy on Policies – Approvals and Ratification):</td>
<td>Internet &amp; Intranet ✔ Intranet Only</td>
</tr>
<tr>
<td>Document Library Folder/Sub Folder</td>
<td>Clinical/Haematology</td>
</tr>
<tr>
<td>Links to key external standards</td>
<td>CQC – Outcome 4</td>
</tr>
</tbody>
</table>
Related Documents:

- RCHT Risk assessment for thromboprophylaxis during pregnancy, labour and after vaginal delivery.
- RCHT Thromboprophylaxis in 28regnancy
- RCHT Thrombosis and Anticoagulation Policy
- RCHT Guidance on travel-related venous thrombo-embolism
- RCHT protocol for the use of anti-embolism stockings
- RCHT guidelines – secondary prevention after stroke or TIA
- RCHT guideline- Acute Stroke Management
- RCHT guidelines – Cornwall stroke care pathway
- National Institute Clinical Excellence (NICE) 2010 clinical guideline: Venous Thromboembolism: reducing the risk (92).
- Addendum to clinical guideline CG 92 venous thrombo-embolism in adults admitted to hospital :reducing the risk (chapter 24 – stroke patients)

Training Need Identified? Yes

Version Control Table

<table>
<thead>
<tr>
<th>Date</th>
<th>Version No</th>
<th>Summary of Changes</th>
<th>Changes Made by (Name and Job Title)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jul 10</td>
<td>V4.0</td>
<td>Reformat per NICE</td>
<td>Desmond Creagh, Chair of Thrombosis Prevention and Anticoagulation Steering Group</td>
</tr>
</tbody>
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Previous version history not known
<table>
<thead>
<tr>
<th>Date</th>
<th>Version No</th>
<th>Summary of Changes</th>
<th>Changes Made by (Name and Job Title)</th>
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</thead>
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<tr>
<td>May 11</td>
<td>V5.0</td>
<td>New document specific to VTE assessment and prophylaxis (adult patients) when in hospital. This document supports the clinical guidance of the larger and broader anticoagulation document.</td>
<td>S Arnold, Matron for Practice Development</td>
</tr>
<tr>
<td>Jun 13</td>
<td>V5.1</td>
<td>Reformat. Minor amendment to paras 6.1.3 to 6.1.5 to reflect current practice.</td>
<td>Andrew McSorley, Lead Anticoagulation/Thrombosis Nurse</td>
</tr>
<tr>
<td>Aug 13</td>
<td>V5.2</td>
<td>Added: Para 5.8. Role of the RCHT Thrombosis Practitioner and Paras 6.3.4 – 6.3.6 Inclusion of guidance for management of suspected VTE as per NICE QS29</td>
<td>Andrew McSorley, Lead Anticoagulation/Thrombosis Nurse</td>
</tr>
<tr>
<td>Sep 13</td>
<td>V5.3</td>
<td>Added: section 6.24-6.26 and Appendix 7 extended prophylaxis post discharge as per NICE QS3 on VTE prevention</td>
<td>Andrew McSorley, Lead Anticoagulation/Thrombosis Nurse</td>
</tr>
<tr>
<td>Apr 14</td>
<td>V5.4</td>
<td>Amendments to reflect introduction of E-VTE risk assessment within EPMA system Revision to section 6.5 guidance on Heparin induced thrombocytopenia</td>
<td>Andrew McSorley, Lead Anticoagulation/Thrombosis Nurse</td>
</tr>
</tbody>
</table>
| Mar 15   | V5.5       | 4 – Inclusion of the term DOAC (Direct Oral Anticoagulant) to replace NOAC throughout the document  
6.1.5 added inclusion of review of thrombo-prophylaxis status at post take ward round  
6.2.1 – amended to reflect use of IPC only in patients with confirmed stroke  
6.3.4 – amendments to table including removal of reference to 25000units/ml Dalteparin ampoules as no longer used  
6.4.7 – amended to reflect the use of Direct oral anticoagulants in confirmed VTE  
6.4.8 – amendments to table including removal of reference to 25000units/ml Dalteparin ampoules as no longer used  
6.4.10 inclusion of tables outlining treatment with direct oral anticoagulants for confirmed VTE  
6.5.1 – amended to reflect inclusion of DOACS Appendix 4 – Section on Cardiology amended to reflect use of Fondaparinux in ACS, LMWH for prophylaxis  
Appendix 6 – Title amended to reflect algorithm for treatment of VTE with LMWH and vitamin K antagonist; Chart table amended to remove references to Dalteparin 25000 units/ml ampoules as no longer used | Andrew McSorley, Lead Anticoagulation/Thrombosis Nurse |
<table>
<thead>
<tr>
<th>Date</th>
<th>Version No</th>
<th>Summary of Changes</th>
<th>Changes Made by (Name and Job Title)</th>
</tr>
</thead>
</table>
| Dec 15     | V5.6       | 6.2.1 Insertion of link to IPC protocol and removal of reference to foot impulse devices  
6.2.1 Addendum to section on cancer patients to include recommendations for prophylaxis in Myeloma patients receiving lenalidomide or thalidomide  
6.4.10 Addendum to include recommendations for option of treatment of VTE with DOACs  
6.4.11 Inclusion of Edoxaban as an option for treatment of confirmed VTE  
Appendix 4 – Alteration to stroke guidance – removal of references to foot impulse devices | Andrew McSorley, Lead Anticoagulation/Thrombosis Nurse |
| June 16    | V6         | 5.8 Alteration of the term ‘Hospital Acquired Thrombosis’ to ‘Hospital Associated Thrombosis’  
6.1.9 Changes to titles of current RCHT pregnancy and post-partum thrombosis guidance  
6.2.1 Addendum to Patient at risk section to include patients with Liver disease and use of IPC in patients contra-indicated to AES  
6.3.3 Addendum to indicate D-dimer should not be used in inpatients with >24 hour stay  
Appendix 4 : amendments to include the need for consideration of IPC in patients contra-indicated to standard mechanical prophylaxis | Andrew McSorley, Lead Anticoagulation/Thrombosis Nurse |
| Nov 17     | V7.0       | 6.1.6 Addendum recommending repeat VTE risk assessment of patients on clinical transfer  
6.2.1 Addendum indicating required completion of VTE risk assessment in EPMA for patients on end of life pathway  
6.2.1 Addendum indicating reference to appendix 7 for patient who require extended prophylaxis  
6.2.6 Addendum for consideration of use of LMWH in patients with dietary restrictions  
6.4.10 Additional guidance indicating use of Edoxaban on specialist initiated basis only  
Appendix 2 – revision of all low cohort areas for VTE prophylaxis prescribing  
Appendix 4 - alteration of wording to clarify restart of LMWH prophylaxis post-operatively  
Appendix 4 – Addendum to include prophylaxis and risk assessment advice for patients with lower | Andrew McSorley, Lead Anticoagulation/Thrombosis Nurse |

All or part of this document can be released under the Freedom of Information Act 2000

This document is to be retained for 10 years from the date of expiry.

This document is only valid on the day of printing

Controlled Document
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### Appendix 9. Initial Equality Impact Assessment Screening Form

<table>
<thead>
<tr>
<th>Name of service, strategy, policy or project (hereafter referred to as policy) to be assessed:</th>
<th>Policy for Thrombosis Prevention and Anticoagulation in Adults when in hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directorate and service area:</td>
<td>Clinical/Haematology</td>
</tr>
<tr>
<td>Is this a new or existing Procedure?</td>
<td>New</td>
</tr>
<tr>
<td>Name of individual completing assessment:</td>
<td>Andrew McSorley</td>
</tr>
<tr>
<td>Telephone:</td>
<td>01872 253827</td>
</tr>
</tbody>
</table>

1. **Procedure Aim***

To provide clear framework for all clinical staff in the assessment, management and prevention of venous thromboembolism for patients.

2. **Procedure Objectives***

The purpose of this document is to provide all staff regardless of grade or profession with clear practice guidelines when assessing, planning and managing patient care. The aim of the document is to guide clinical practice, including prescribing chemical and mechanical thrombosis prevention, and to highlight the benefits and risks of anticoagulation care.

The policy meets the requirements of NICE CG 92 (2010) and the Department of Health initiative (2010) to further VTE risk assessment and prophylaxis. Also meets requirements of NICE 144 (2012) regarding treatment of suspected and confirmed VTE.

3. **Procedure – intended Outcomes***

- Promote multi-disciplinary working in reducing the incidences of VTE and effective patient assessment.
- Develop a culture where VTE assessment, prevention and management is embedded in acute clinical inpatient areas.
- To raise staff awareness, identify lessons learned and recommend action through policy audit.

4. **How will you measure the outcome?***

The Trust will monitor VTE assessment practice via the national Unify data collection system, local audit and CQUIN monitoring. Additional monitoring sources include incidents and complaints.

5. **Who is intended to benefit from the Procedure?***

- Inpatients, their families and / or carers.
- Clinical staff

6a. **Is consultation required with the workforce, equality groups etc. around this procedure?***

- No – reformat of existing RCHT policy to specify key criteria for VTE assessment within EPMA. The existing policy will be amended to become further guidance and resource relating to anticoagulation for other clinical management and ongoing care.

b. **If yes, have these groups been consulted?***

c. **Please list any groups who have been consulted about this procedure.***
# 7. The Impact

Please complete the following table.

Are there concerns that the policy **could** have differential impact on:

<table>
<thead>
<tr>
<th>Equality Strands:</th>
<th>Yes</th>
<th>No</th>
<th>Rationale for Assessment / Existing Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex (male, female, trans-gender / gender reassignment)</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race / Ethnic communities /groups</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disability - Learning disability, physical disability, sensory impairment and mental health problems</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion / other beliefs</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marriage and civil partnership</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pregnancy and maternity</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Orientation, Bisexual, Gay, heterosexual, Lesbian</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

You will need to continue to a full Equality Impact Assessment if the following have been highlighted:
- You have ticked “Yes” in any column above and
- No consultation or evidence of there being consultation- this **excludes** any policies which have been identified as not requiring consultation. **or**
- Major service redesign or development

8. Please indicate if a full equality analysis is recommended. **Yes** **No ✔**

9. If you are not recommending a Full Impact assessment please explain why.

Not needed.

Signature of policy developer / lead manager / director | Date of completion and submission
--- | ---

Names and signatures of members carrying out the Screening Assessment 1. Andrew McSorley 2.

Keep one copy and send a copy to the Human Rights, Equality and Inclusion Lead, c/o Royal Cornwall Hospitals NHS Trust, Human Resources Department, Knowledge Spa, Truro, Cornwall, TR1 3HD

A summary of the results will be published on the Trust’s web site.

Signed ____________________

Date ____________________