VENOUS THROMBOEMBOLISM (VTE) POLICY FOR COMMUNITY HOSPITAL IN-PATIENTS

Version 7: August 2022

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DOCUMENT CONTROL SHEET

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Version Date	Version No.	Author/Reviewer	Summary of Change
Feb 11	2	Claire Parfrey	
Sep 12	3	Emma Tang	Version control, monitoring & review added, change of agent, contact updated.
Jan 15	4	Emma Tang, Hayley Brown	Minor changes: title, roles and responsibilities, VTE assessment form, discharge planning, removed reversal section
Jan 17	5	Hannah Lambert, Sue Jenkins	Minor changes - appendices,
Dec 18	6	Charles Barsted	Enoxaparin LMWH off choice. Update links to training sites, minor changes.
Aug 22	7	Emma Tang	Title changed to include treatment of VTE, EPMA, added section on definition and suspected VTE, revised monitoring requirement and post op prophylaxis, updated reference, equality and diversity assessment

EQUALITY AND DIVERSITY IMPACT ASSESSMENT

Impact Assessments must be conducted for:

- ❑ All ECCH policies, procedures, protocols and guidelines (clinical and non-clinical)
- ❑ Service developments
- ❑ Estates and facilities developments

Name of Policy / Procedure / Service	Venous Thromboembolism (VTE) Policy for Community Hospital In-patients
Manager Leading the Assessment	Emma Tang
Date of Assessment	10/05/2022
Signature	Emma Tang

INITIAL ASSESSMENT

Q1. Is this a new or existing policy / procedure / service? ✓ Existing
Q2. Who is the policy / procedure / service aimed at? ✓ Staff
Q3. Could the policy / procedure / service affect different groups (age, disability, gender, race, ethnic origin, religion or belief, sexual orientation) adversely? ✓ No If the answer to this question is NO please sign the form as the assessment is complete.

CONTENTS

1. INTRODUCTION

In 2005 the House of Commons Health Committee published their Report on the Prevention of Venous Thromboembolism in Hospitalised Patients which highlighted that venous thromboembolism (VTE) accounted for up to 25,000 preventable deaths in Hospitals in England each year. In April 2007 the Department of Health published the report of an Independent Expert Working Group that provided a strategy for a national VTE prevention programme and in January 2010 NICE published guidance on the prevention of VTE. Treatment of non-fatal symptomatic VTE and related long-term morbidities is associated with considerable cost to the health service. This policy aims to ensure that all patients are given advice relating to their increased risk of thromboembolism and that they are offered appropriate pharmacological or mechanical VTE prophylaxis.

Throughout this policy 'significantly reduced mobility' is used to denote patients who are bedbound, unable to walk unaided or likely to spend a substantial proportion of the day in bed or in a chair (NICE, 2010).

Anticoagulants are one of the classes of medicines most frequently identified as causing preventable harms and admissions to hospitals. There were 600 patient safety incidents of harm or near harm associated with the use of anticoagulants in the UK between 1990 and 2002. Of these, 20% (120) resulted in the death of the patient. The National Patient Safety Agency (NPSA) issued a Patient Safety Alert in 2007 on "*Actions that can make anticoagulant therapy safer*" with the aim of minimizing the risk to patients treated with anticoagulant therapy.

THE RECOMMENDATIONS IN THIS POLICY MUST BE IMPLEMENTED TAKING INTO ACCOUNT THE PATIENT'S INDIVIDUAL CLINICAL SITUATION.

2. PURPOSE AND SCOPE

The purpose of this policy is to ensure that anticoagulation is managed safely within the community hospital and when patients are transferred from one setting to another. All patients admitted to the community hospital are assessed for their thrombosis and bleeding risks within 24 hours of admission. The appropriate level and type of VTE prophylaxis is offered according to their risk factors and reason for admission. It will also ensure that accurate advice is given to patients to enable the patient to make an informed decision about their risk of VTE and whether or not to receive VTE prophylaxis.

This policy applies to medical, nursing and pharmacy staff, whether commissioned, contracted, or directly employed by the East Coast Community Healthcare (ECCH), who are working on the Community Hospital ward.

This policy covers the use of both oral and injectable anticoagulants.

3. DEFINITIONS

The following definitions are intended to provide a brief explanation of the various terms used within this policy.

Term	Definition
Policy	A policy is a formal written statement detailing an enforceable set of principles or rules. Policies set the boundaries within which we operate. They also reflect the philosophy of our organisation.
Vitamin K antagonists (VKA)	The oral anticoagulants warfarin, acenocoumarol and phenindione antagonise the effects of Vitamin K and take at least 48 to 72 hours for the anticoagulant effect to develop fully.
Direct-acting oral anticoagulants (DOACs)	These include apixaban, dabigatran, edoxaban and rivaroxaban. Dabigatran is a direct thrombin inhibitor. Apixaban, edoxaban and rivaroxaban and apixaban are oral activated factor Xa inhibitors.
Injectable anticoagulants	Injectable anticoagulants include: • Heparins (unfractionated/standard heparin and low-molecular weight heparins) • Heparinoids (danaparoid) • Fondaparinux • Hirudins (lepirudin and bivalirudin)
Renal impairment	People with an estimated glomerular filtration rate (eGFR) of less than 30 ml/min/1.73 m^2
Electronic Prescribing and Medicines Administration (EPMA)	An electronic system that facilitates and enhances the communication of a prescription, aiding the choice, administration, and supply of a medicine through knowledge and decision support and provide a robust audit trail for the entire medicines use process
Venous thromboembolism (VTE)	It is a term referring to blood clots in the veins which partially or completely obstructs blood flow. It is a disorder that includes deep vein thrombosis (DVT) and pulmonary embolism (PE)

4. ROLES AND RESPONSIBILITIES

All staff are reminded of their own professional responsibility to ensure that they always adhere to current best practice, maintain and act within their own competence, and abide by their professional codes of conduct.

4.1 Registered nurses

- Ensure that a VTE risk assessment is completed on EPMA for all patients admitted within 6 hours.
- Provide patients with verbal and written information at admission on VTE prophylaxis.
- Monitor and observe for any adverse effects of the VTE prophylaxis medication.
- Only carry out the assessment once they have completed the appropriate training (see section 10) and been assessed as competent.
- Identify and agree with their line manager any training needs

4.2 Prescribers

- Review the completed VTE risk assessment.
- Prescribe VTE prophylaxis on EPMA drug chart if clinically indicated, document the decision in the medical notes and inform ward staff accordingly.
- If VTE prophylaxis is not indicated, reason for not prescribing must be documented.
- Regularly review patient's need for VTE prophylaxis and ensure that changes are made where indicated if the patients clinical condition changes.

4.3 Ward Managers

- Ensure all patients receive a VTE risk assessment on admission and all staff adhered to the standards set within this policy.

4.4 Pharmacists

- To review VTE assessment and ensure that VTE prophylaxis medication, dosage and route are appropriate for the patient if indicated.

5. PATIENT INFORMATION

An approved Information Leaflet on VTE (Appendix 1) must be given to all patients upon admission to our Community Hospital. Written and verbal information on VTE prevention must be offered to all patients as part of the discharge process. Patients who are discharged with pharmacological and/or mechanical VTE prophylaxis must be assessed to ensure they are able to use it correctly (or have arrangements made for someone to be available who will be able to help them) and know how long they need to continue the prophylaxis for.

Information on reducing their risk of VTE such as keeping well hydrated and, become more mobile should be provided if possible.

Be aware that heparins are of animal origin, and this may be of concern to some patients (e.g. Muslims, Jews or vegetarians).

6. VTE AND BLEEDING RISK ASSESSMENT

(See also Appendix 2: VTE pathway)

ALL patients admitted to the community hospital ward must be assessed for VTE and bleeding risk by a registered nurse using the risk assessment template on SystmOne at admission.

This includes patients who are transferred from another hospital or patient who have already been prescribed a different choice of VTE prophylaxis and treatment. Nurses carrying out the assessment must ensure that they have completed the appropriate training and been assessed as competent. If clinically indicated and patient consents, the admitting clinician must decide on prescribing of VTE prophylaxis as soon as possible after risk assessment has been completed.

It is important that patients are mobilised as soon as possible, particularly after surgery. Dehydration is also an important factor in the development of VTE and patients should not be allowed to become dehydrated unless clinically indicated during their stay in hospital.

Routine monitoring is not recommended. Careful clinical monitoring may be appropriate in some cases e.g. patients at risk of hyperkalaemia, thrombocytopenia, renal impairment or deranged clotting. .

When bleeding occurs during anticoagulation, a prescriber must be contacted immedicatley for advice.

If major bleeding occurs during anticoagulation, therapy must stop and urgent transfer to an acute trust via 999 emergency ambulance.

6.1 VTE Risk Factors

All patients who are at risk of VTE if they are expected to have ongoing reduced mobility relative to their normal state plus any VTE risk factor below:

- Active cancer or cancer treatment
- Age over 60 years
- Dehydration
- Known thrombophilias
- Obesity (BMI > 30Kg/m^2)
- One or more significant co-morbidities (e.g. heart disease; metabolic, endocrine or respiratory pathologies; acute infectious diseases; inflammatory conditions)
- Personal history or first-degree relative with a history of VTE
- Use of Hormone Replacement Therapy (HRT)
- Use of oestrogen-containing contraceptive therapy
- Varicose veins with phlebitis
- Significantly reduced mobility for 3 days or more or
- Hip replacement within past 4 weeks
- Knee replacement within past 2 weeks

6.2 Bleeding Risk

- Active or high risk of bleeding
- Acquired bleeding disorders e.g., acute liver failure
- Concurrent use of anticoagulants e.g., LMWH, Warfarin (when INR > 2), Edoxaban, Rivaroxaban, Dabigatran or Apixaban.
- Lumber puncture/epidural/spinal anaesthesia within the previous 4 hours or expected within the next 12 hours.
- Uncontrolled hypertension (≥ 230/120 mmHg)
- Acute stroke
- Thrombocytopenia (platelet < 75 x 10^9/l)
- Untreated inherited bleeding disorders e.g., haemophilia or van Willebrand's disease

6.3 Reassessment of VTE and Bleeding Risk

Patients' risks of bleeding and VTE must be reassessed within 24 hours of admission and whenever the clinical situation changes, to:
- ensure that the methods of VTE prophylaxis being used are still suitable
- ensure that VTE prophylaxis is being used correctly
- identify adverse events resulting from VTE prophylaxis

7. PHARMACEUTICAL VTE PROPHYLAXIS

Low molecular weight heparin (LMWH) Enoxaparin (Inhixa®) is the choice for pharmaceutical VTE prophylaxis in the community hospital. It should be considered in all patients, if the risk of VTE outweighs the risk of bleeding, provided there is no contraindication to Enoxaparin and patient is not already on a different choice upon admission.

Do not routinely offer VTE prophylaxis to patients admitted for terminal care or end-of-life care pathway.

Do not offer pharmaceutical VTE prophylaxis if the patient has any risk factor for bleeding and the risk of bleeding outweighs the risk of VTE or contraindicated to Enoxaparin e.g., hypersensitivity to Heparin / Heparin Induced Thrombocytopenia (HIT) or excipients. (Please refer to the current British National Formulary for a most up-to-date list) Consider alternative means of VTE prophylaxis e.g., anti-embolism (T.E.D.^{TM}) stockings. However, remember TED Stockings are contraindicated in some patients (see Section 8).

Do not regard aspirin or other antiplatelet agents e.g., clopidogrel as adequate prophylaxis for VTE. Consider adding additional pharmacological VTE prophylaxis to patients who are having antiplatelet agents who are assessed to be at increased risk of VTE. Consider the risk of bleeding and co-morbidities such as arterial thrombosis.

Do not offer additional pharmacological VTE prophylaxis to patients who are already on full anticoagulant therapy e.g., treatment dose of LMWH, direct-acting oral anticoagulants (DOACs), or Vitamin K antagonists (VKA warfarin, acenocoumarol and phenindione) and who are within their therapeutic range, providing anticoagulant therapy is continued.

Enoxaparin is the formulary low molecular weight heparin (LMWH) used within the organisation and the dose must be adjusted according to body weight and creatinine clearance (See details in appendix 4).

Enoxaparin must be prescribed in the appropriate section of the drug charts on EPMA. If a decision has been made not to prescribe Enoxaparin the doctor document the reason why it is not being prescribed. **Units must always be written in full**; 'U' or 'IU' are not allowed on a paper drug chart.

If the prescriber is in any doubt as to whether Enoxaparin is suitable for a patient or not, specialist advice should be sought from the Haematologists at the James Paget University Hospital.

8. VTE PROPHYLAXIS IN POST-OPERATIVE PATIENTS

Anti-embolism (TED) stockings and/or pharmacological VTE prophylaxis may already been prescribed for patient upon transfer to one of our hospitals, they must still be assessed on admission so the admitting clinician can decide whether ongoing treatment with VTE prophylaxis is still clinically indicated for the patient.

All mechanical VTE prophylaxis must be continued until patient's mobility is no longer significantly reduced.

Patients who have undergone elective hip or knee replacements will often be prescribed Rivaroxaban or aspirin (instead of LMWH) as the pharmacological VTE prophylaxis upon admission to the community hospital. All other post-surgical patients will be prescribed Enoxaparin where indicated. It is important that the choice of pharmacological VTE prophylaxis and the appropriate course is continued during their stay in our Community Hospital bed and following discharge.

Current NICE recommendation on VTE prophylaxis duration following surgery:

- Elective total hip replacement – LMWH for 28 days, LMWH for 10 days followed by aspirin 75mg for a further 28 days or rivaroxaban
- Elective knee replacement – continue LMWH or aspirin (75mg or 150mg) for 14 days
- Hip fracture after surgery – until the person no longer has significantly reduced mobility relative to their normal or anticipated mobility
- Major cancer surgery in the abdomen or pelvic area – continue for 28 days
- Other surgeries – continue until mobility is no longer significantly reduced (usually 5-7 days)

9. ANTI-EMBOLISM STOCKINGS

Mechanical methods of prophylaxis e.g., anti-embolism (TEDS) stockings are not proven to prevent VTE in medical patients and should only be considered in those patients that cannot be prescribed pharmacological VTE prophylaxis.

Anti-embolism stockings must not be used in patients who have: -

- suspected or proven peripheral arterial disease
- peripheral arterial bypass grafting

- peripheral neuropathy or other causes of sensory impairment
- any local conditions in which stockings may cause damage, e.g., fragile ‘tissue paper’ skin, dermatitis, gangrene, or recent skin graft
- known allergy to material of manufacture
- cardiac failure
- severe leg oedema or pulmonary oedema from congestive heart failure
- unusual leg size or shape
- major limb deformity preventing correct fit.

Use caution and clinical judgement when applying anti-embolism stockings over venous ulcers or wounds.

Patients who need anti-embolism stockings must have their legs measured and the correct size of stocking provided. They should be re-measured, and stockings refitted if oedema or postoperative swelling develops.

Anti-embolism stockings should be fitted, and patients shown how to use them, by staff trained in their use.

Use anti-embolism stockings that provide graduated compression and produce a calf pressure of 14-15mmHg.

Patients should be encouraged to wear their anti-embolism stockings day and night until they no longer have significantly reduced mobility.

Remove anti-embolism stockings daily for hygiene purposes and to inspect skin condition. In patients with a significant reduction in mobility, poor skin integrity or any sensory loss, inspect the skin two or three times per day, particularly over the heels and bony prominences.

Discontinue the use of anti-embolic stockings if there is marking, blistering, or discolouration of the skin, particularly over the heels and bony prominences, or if the patient experiences pain or discomfort.

Nursing staff should make regular checks, at least twice a day of anti-embolic stockings to ensure patients are wearing them correctly.

10. PROCEDURE TO BE FOLLOWED IF VTE IS SUSPECTED

10.1 Suspected DVT

If a nurse suspects that a patient in a community hospital may have a DVT, arrangements must be made for the patient to be urgently reviewed by a doctor.

If the doctor suspects a DVT, they must contact the anticoagulation specialist nurse at the JPUH on 01493-452452 Bleep 1473 (9am-5pm Mon-Fri) to arrange a Doppler USS. The patient does not need to be transferred to the JPUH for admission, only to attend for the scan.

Note: D-Dimer levels are not recommended for hospital in-patients as they can be elevated in many other conditions and can result in delays to patient's treatment whilst awaiting the results.

Until the Doppler USS scan can be completed the patient should be prescribed a treatment dose of low molecular weight heparin according to their weight unless there are contraindications to its use (see Summary Product Characteristics for further information and appendix 4 for dosing).

Note: Wards do not routinely stock the treatment doses of LMWH so if none are available these should be ordered as an urgent item from the JPUH Pharmacy with arrangements made for special, same-day, transport if needed.

Following a positive scan and diagnosis of DVT, the patient will be sent back to the community hospital with appropriate anticoagulation, either as a treatment pack of warfarin and treatment dose of LMWH to be administered until INR is in range, or a supply of oral anticoagulant as clinically appropriate.

If the scan is negative, LMWH treatment dose should be discontinued, the patient re-assessed and started on prophylaxis dose of LMWH (see Appendix 4 for dosing).

10.2 Suspected PE

If a patient is suspected to have a PE, the patient must be transferred immediately to the Emergency Admission and Discharge Unit (EADU) at the JPUH for diagnosis and treatment.

PE should be considered in any patient developing breathlessness, chest pain, cough/haemoptysis and/or hypotension. The following clinical signs are associated with PE: tachycardia; tachypnoea; pleural rub; right ventricular heave or accentuated pulmonary component to second heart sound; hypoxia.

Upon transfer to the JPUH EADU the patient will have been discharged from the community hospital's care and therefore will need to be re-admitted back to the community hospital by the JPUH staff, in accordance with the admissions policy, when diagnosis has been established and treatment started.

Anticoagulant treatment should continue as advised by the JPUH anticoagulant service.

11. PLANNING FOR DISCHARGE

Offer patients and/or their families or carers verbal and written information on:

- Signs and symptoms of deep venue thrombolysis (DVT) and pulmonary embolism (PE).
- Importance of seeking medical help and who to contact if DVT, PE or other adverse event suspected.

If discharged with VTE prophylaxis, also offer patients and/or their families or carers information on:

- correct use and duration of VTE prophylaxis at home
- importance of using VTE at home correctly and for recommended duration
- signs and symptoms of adverse events related to VTE prophylaxis
- who to contact if they have problems using VTE prophylaxis at home?

If discharged with VTE prophylaxis, nursing staff must ensure that:
- the patient is able to use it or has someone who can do this
- the patient's GP is notified.

12. TRAINING

The NPSA, in conjunction with the British Medical Journal (BMJ), have developed two e-learning modules on initiating and maintaining anticoagulant therapy which can help practitioners assess their current level of competence and provide training covering knowledge and understanding to promote safe practice. The e-learning modules are free; however registration is required with the BMJ Learning website. http://learning.bmj.com/learning/info/CME-CPD-for-nurses.html

The e-learning training is available on Venous Thromboembolism (VTE) is available from Health Education England e-learning for healthcare website. https://www.e-lfh.org.uk/programmes/venous-thromboembolism/

13. MONITORING AND REVIEW

The policy will be monitored and reviewed by the Medicines Management Group. It will be fully reviewed every two years or sooner if deemed necessary due to changes in national or local guidance, professional practice, or user feedback.

Compliance with this policy will be measured by:
- Managers monitoring day to day activity in their services
- Routine prescription monitoring by ward pharmacists
- Receiving comments through complaints and informal feedback via staff

14. REFERENCES

- British National Formulary 2022. BNF content published by NICE. [online] Available at: https://bnf.nice.org.uk [Accessed 11 August 2022].
- National Institute for Health and Clinical Excellence (2018) Venous thromboembolism in over 16s: reducing the hospital-acquired of deep vein thrombosis or pulmonary embolism (last updated August 2019). Available at https://www.nice.org.uk/guidance/ng89 last accessed 03.08.22
- Summary of Product Characteristics – Enoxaparin (Inhixa) Pre-Filled Syringes Last updated 27/04/2022. Accessed at http://emc.medicines.org.uk/ on 12/08/2022
- James Paget University Hospitals NHS Foundation Trust (2022) Prevention and Treatment of Venous Thromboembolism in Patient over 16 Trust Guideline

15. APPENDIX 1 VTE LEAFLET

General Information on VTE

VTE occurs in 1 in 500 of the general population.

You may have heard of people getting a clot in their leg from long periods of time on aircraft, sometimes referred to as 'economy – class syndrome'.

VTE happens when blood flow is restricted or reduced for some reason causing the blood to clot in the vein.

People can help reduce the risk by staying active. This can be done by walking around or doing gentle leg exercises to keep the blood flow moving.

Conditions that can increase your risk of a blood clot include

- **Being overweight**
- **Smoking**
- **Pregnancy**
- **Cancer**
- **Taking hormone therapy**
- **Reduced mobility**
- **Family history of blood clots**
- **Having an operation**
- **Being dehydrated**

This is not an exhaustive list. Please ask your nurse or doctor if you wish to discuss your own personal risk factors

More information can be found at
www.nice.org.uk
www.dh.gov.uk
www.eoe.nhs.uk

Help us to improve patient information

We welcome any comments or suggestions you may have to help us improve the content of this leaflet.

Complaints and Comments

If you wish to discuss any aspects of the care you have received during your hospital stay, please speak to the nurse in charge.

Alternatively, contact East Coast Community Healthcare Patient Advice and Liaison Service (PALS) on 01502 718666 or e-mail ECCH.patientliaison@nhs.net
You have the right at any time, to contact The Information Commissioner's Office on: 01625 545 745

If you would like this leaflet in large, audio, Braille alternative format or in a different language please contact East Coast Community Healthcare on 01502 718666 and we will do our best to help

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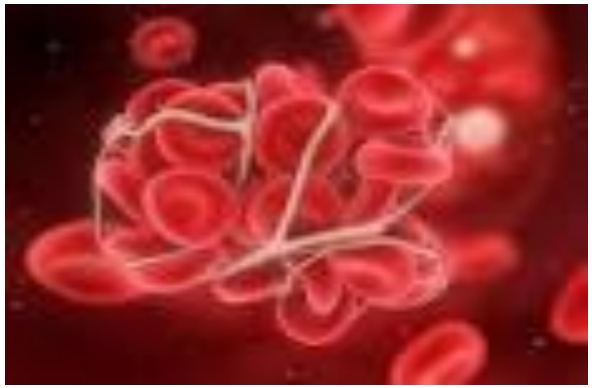
communication for all

January 2016 V1.1

east coast
community healthcare

Venous ThromboEmbolism (VTE)

PREVENTION



Information for patients admitted to a Community Hospital

Our Commitment to you

East Coast Community Healthcare (ECCH) is committed to maintaining the safety of all patients in our care. It has been well documented that patients in hospital have an increased risk of developing a blood clot or venous thromboembolism (VTE) if preventative action is not taken.

To ensure we maintain your safety all patients admitted to our Community Hospitals will be assessed on admission for any risk factors that might increase the likelihood of a clot and be advised regarding treatment.

Thorough assessment

By discussing with you your lifestyle, medical history, reason for admission and your usual levels of activity and mobility a nurse will complete this assessment. The doctor will then review this assessment and decide on what treatment, if any, you will need to prevent a clot occurring.

Risk factors for clot formation include increased age, reduced mobility, obesity, a diagnosis of cancer, heart failure, hormone therapy, conditions that cause blood to clot more easily, recent surgery and acute infections. This list is not exhaustive.

What can I do to reduce my risk of VTE?

- **Keep moving / walking during your stay in hospital – Leg exercise information is available from your nurses**
- **Ensure you have at least eight drinks a day to keep you well hydrated**

What can the hospital do to reduce my risk of VTE?

- **Anti-embolism stockings. Some patients will be encouraged to wear elasticated stockings which help your body keep the blood flow moving in your legs**
- **Some patients will be suitable for an anticoagulant (clot preventing) injection each day or a tablet to decrease risk of clots**

What if I already take medication to thin my blood?

Some patients may already be taking medication such as Aspirin or Warfarin for other conditions which are used to thin the blood. Your nurses and doctor will consider this when you are admitted so that you are given the correct treatment in hospital

What happens when I leave hospital?

When you are discharged from hospital your doctor will advise you if you need to continue with any treatment. If you are on injection therapy, you will be encouraged to learn how to give this to yourself or a relative or carer may be shown how to give the medication before you are discharged.

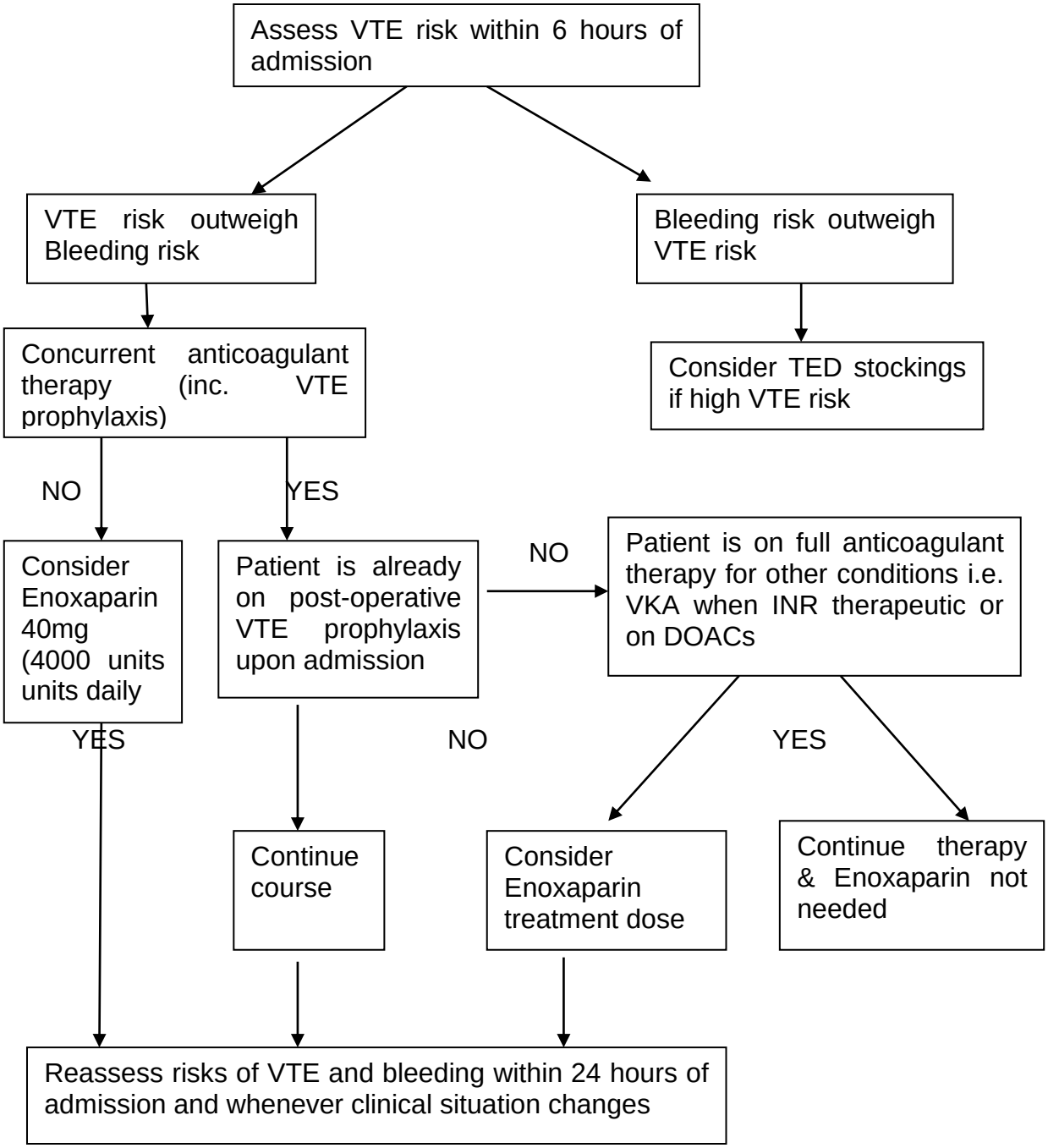
Keep a look out for signs and symptoms

When you are discharged you should look out for pain or tenderness in your legs particularly the calf area. This sign may be seen with swelling, warmth, and redness of the skin.

If a clot becomes dislodged patients may suffer with a shortness of breath or chest pain. You should seek urgent medical advice if you experience these signs or symptoms.

Remember to keep as active as you are able, eat a well-balanced diet and have at least eight drinks a day to keep your body healthy

16. APPENDIX 2: VTE PATHWAY



For all patients:

- Do not allow patients to become dehydrated unless clinically indicated.
- Encourage patients to mobilise as soon as possible.
- Do not regard aspirin or other antiplatelets agents as adequate prophylaxis for VTE.
- Do not routinely offer VTE prophylaxis to patients admitted for terminal care or end-of-life care pathway.
- Check renal function – consider dosage reduction if renal impairment

17. APPENDIX 3 – VTE RISK ASSESSMENT TOOL

STEP ONE – MOBILITY Tick one box

Medical or post-surgical patient expected to have reduced mobility relative to normal state ☐ If ticked Assess for thrombosis and bleeding risk by completing all steps below	Palliative care patient ☐ If ticked Risk assessment now complete – no thromboprophylaxis required – Go to Step 4	Medical patient **NOT** expected to have significantly reduced mobility relative to normal state ☐ If ticked Risk assessment now

STEP TWO – THROMBOSIS RISK
CIRCLE ALL THOSE KNOWN TO APPLY

Age > 60 years, Dehydration, Significantly reduced mobility for 3 days or more

Active cancer or cancer treatment Obesity Significant co-morbidities,

First degree relative with history of VTE Hormone therapy (male and female)

Varicose veins with phlebitis Known clotting disease

Hip replacement within past 4 weeks Knee replacement within last 2 weeks

Recent surgery with significant reduction in mobility Other - please specify

STEP THREE – BLEEDING RISK - CIRCLE ALL THOSE KNOWN TO APPLY

Active bleeding acquired bleeding disorders e.g. acute liver failure acute stroke

Concurrent use of anticoagulants such as Warfarin, Rivaroxaban or Dabigatran

Thrombocytopenia* Uncontrolled systolic hypertension other - please specify

***** If patient history or recent full blood count result not available at admission do not circle and tick here ☐

STEP FOUR - RISK OF VTE - Tick appropriate category

High risk of VTE with **low** bleeding risk ☐	**High** risk of VTE with **significant** bleeding risk ☐	**Low** risk of VTE ☐

NURSES SIGNATURE	DATE TIME
DOCTORS SIGNATURE Enoxaparin prescribed Yes ☐ No ☐	DATE TIME

18. Appendix 4 Prescribing guidance (with thanks James Paget Hospital)

Enoxaparin Switch Guidelines.pdf

James Paget University Hospitals NHS
NHS Foundation Trust

Author: Kalvin Scott, Haematology Pharmacist Version: 1.0 Issue date: 17/10/18

Temporary use of Enoxaparin while Dalteparin is unavailable within the trust

There is a national shortage of dalteparin that will affect the Trust during October and November 2018. During this time, we will need to use an alternative, which will by the Inhixa brand of enoxaparin**.**

Prescribing guidance is as below:

Prescribing

Calculate renal function as outlined below**:**

Creatinine clearance (mL/min) = **F x (140-age) x weight* (kg)** / **Serum creatinine (µmol/L)** Male F= 1.23 Female F=1.04

- Use ideal body weight (IBW) in patients unless over or under weight:

IBW Females = [45.5kg + (2.3 x every inch over 5ft)] kg
IBW Males = [50kg + (2.3 x every inch over 5ft)] kg

- Use adjusted body weight in obese patients = IBW + 0.4 x (actual body weight – IBW) kg
- Use actual body weight in underweight patients

A creatinine clearance calculator is also available on the Trust intranet or can be accessed by following this link

VTE Prophylaxis					
Indication		**CrCl >30ml/min/1.73m2**		**CrCl ≤30ml/min/1.73m$_2$**	
		Enoxparin	**Dalteparin**	**Enoxaparin**	**Dalteparin**
Medical patients or high risk surgical patient	<50kg	20mg ONCE daily	2500 IU ONCE daily	20mg ONCE daily	2500 IU ONCE daily
	50-100kg	40mg ONCE daily	5000 IU ONCE daily	20mg ONCE daily	2500 IU ONCE daily
	100-150kg	40mg TWICE daily	5000 IU TWICE daily	40mg ONCE daily	5000 IU ONCE daily
	150-180kg	60mg TWICE daily	7500 IU TWICE daily	60mg ONCE daily	7500 IU ONCE daily
	>180kg	Contact haematologist	Contact haematologist	40mg TWICE daily	5000 IU TWICE daily
		CrCl >15ml/min/1.73m2		**CrCl ≤15ml/min/1.73m$_2$**	
				Enoxaparin	**Dalteparin**
Elective hip replacement		Enoxaparin 40mg ONCE daily **OR** Dalteparin 5000 IU ONCE daily until discharge then Rivaroxaban 10mg ONCE daily for a total of 35 days post surgery		20mg ONCE daily for 28 days	2500 IU ONCE daily for 28 days
Elective knee replacement		Enoxaparin 40mg ONCE daily **OR** Dalteparin 5000 IU ONCE daily until discharge then Rivaroxaban 10mg ONCE daily for a total of 14 days post surgery		20mg ONCE daily for 14 days	2500 IU ONCE daily for 28 days

Antenatal and postnatal thromboprophylaxis				
Weight	**CrCl >30ml/min/1.73m2**		**CrCl ≤30ml/min/1.73m$_2$**	
	Enoxaparin	**Dalteparin**	**Enoxaparin**	**Dalteparin**
<50kg	20mg ONCE daily	2500 IU ONCE daily	20mg ONCE daily	2500 IU ONCE daily
50-90kg	40mg ONCE daily	5000 IU ONCE daily	20mg ONCE daily	2500 IU ONCE daily
91-130kg	60mg daily **	7500 IU ONCE daily	Contact haematologist	Contact haematologist
131-170kg	80mg daily **	10000 IU daily **	Contact haematologist	Contact haematologist
>170kg	0.6mg/kg/day **	75 IU/kg/day **	Contact haematologist	Contact haematologist

**** Can be given as either one dose or two divided doses. 0.6mg/kg dose should be rounded to nearest 10mg.**

VTE Treatment				
Indication	**CrCl >30ml/min/1.73m2**		**CrCl ≤30ml/min/1.73m$_2$**	
	Enoxaparin	**Dalteparin**	**Enoxaparin**	**Dalteparin**
Pulmonary Embolism / Deep Vein Thrombosis	1.5 mg/kg ONCE daily	See body weight table	1.0 mg/kg ONCE daily	See body weight table
STEMI/Non-STEMI/ACS – **requiring** therapeutic anticoagulation***	1.0mg/kg TWICE daily	120 IU/kg TWICE daily	1.0mg/kg ONCE daily	120 IU/kg ONCE daily
	CrCl >20ml/min/1.73m2		**CrCl ≤20ml/min/1.73m$_2$**	
			Enoxaparin	**Dalteparin**
STEMI – **not** requiring therapeutic anticoagulation	Fondaparinux 2.5mg IV OD day one then SC OD for up to a maximum of 8 days or on discharge		1.0mg/kg ONCE daily	120 IU/kg ONCE daily
Non-STEMI – **not** requiring therapeutic anticoagulation	Fondaparinux 2.5mg SC OD for up to a maximum of 8 days or on discharge		1.0mg/kg ONCE daily	120 IU/kg ONCE daily

*** - e.g. mechanical prosthetic valve, recent or recurrent VTE, AF with high risk of cardiac thromboembolism, high risk thrombophilia, recent arterial embolism of cardiac origin etc

For treatment doses, round dose using dose banding tables below. NOTE: ACTUAL BODY WEIGHT should be used when determining rounded dose.

Enoxaparin Dose banding – 1.5mg/kg dosing				
Body weight	**Rounded dose**	**Syringe**	**Number of syringes**	**Injection volume**
40-49	60mg	60mg in 0.6ml	1	0.6ml
50-59	80mg	80mg in 0.8ml	1	0.8ml
60-74	100mg	100mg in 1.0ml	1	1.0ml
75-89	120mg	60mg in 0.6ml	2	1.2ml (2x0.6ml)
90-99	140mg	80mg in 0.8ml and 60mg in 0.6ml	2	1.4ml (0.8ml + 0.6ml)
100-109	150mg	100mg in 1.0ml and 60mg in 0.6ml	2	1.5ml (1.0ml + 0.5ml)
110-114	160mg	100mg in 1.0ml and 60mg in 0.6ml	2	1.6ml (1.0ml + 0.6ml)
115-120	180mg	100mg in 1.0ml and 80mg in 0.8ml	2	1.8ml (1.0ml + 0.8ml)
121-135	200mg *	100mg in 1.0ml	2	2.0ml (2x1.0ml)
136-150	220mg *	100mg in 1.0ml and 60mg in 0.6ml	3	2.2ml (1.0ml + 2x0.6ml)
>150	Contact haematologist			
*Measure anti-Xa between days 5-7 and adjust to target anti-Xa level <0.1-0.3U/mL – contact haematology for advice if required.				

Enoxaparin Dose banding – 1.0mg/kg dosing				
Body weight	**Rounded dose**	**Syringe**	**Number of syringes**	**Injection volume**
30-39	30mg	60mg in 0.6ml	1	0.3ml
40-49	40mg	40mg in 0.4ml	1	0.4ml
50-59	50mg	60mg in 0.6ml	1	0.5ml
60-69	60mg	60mg in 0.6ml	1	0.6ml
70-79	70mg	80mg in 0.8ml	1	0.7ml
80-89	80mg	80mg in 0.8ml	1	0.8ml
90-99	90mg	100mg in 1.0ml	1	0.9ml
100-109	100mg	100mg in 1.0ml	1	1.0ml
110-119	110mg	60mg in 0.6ml	2	1.1ml (0.6ml + 0.5ml)
120-129	120mg	60mg in 0.6ml	2	1.2ml (2x0.6ml)
130-139	130mg	80mg in 0.8ml and 60mg in 0.6ml	2	1.3ml (0.8ml + 0.5ml)
140-149	140mg	80mg in 0.8ml and 60mg in 0.6ml	2	1.4ml (0.8ml + 0.6ml)
150-160	150mg	80mg in 0.8ml	2	1.5ml (0.8ml + 0.7ml)
>150	Contact haematologist			

VTE Treatment Dalteparin Dose Banding		
Weight	Dose	CrCl <30ml/min
<46kg	7500 IU ONCE daily	Give normal treatment dose as per body weight dose banding, measure pre-dose anti-Xa level between day 5-7. Pre-dose level should be between <0.1-0.3 U/ml to exclude renal accumulation
46-56kg	10000 IU ONCE daily	
57-68kg	12500 IU ONCE daily	
69-82kg	15000 IU ONCE daily	
83-135kg	18000 IU ONCE daily	
>135kg or complex cases	Contact haematologist	